

LBT-A10/A20

SERVICE MANUAL

*E Model
Australian Model*

These systems are composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

	LBT-A10			LBT-A20		
	Latin American model (E2)	Australian model	Model for other countries	Latin American model (E2)	Australian model	Model for other countries
Stereo Deck Receiver	HST-A10			HST-A20		
Turntable	PS-LX49P			PS-LX49P		
CD Player	CDP-M33 or CDP-C322M (optional)	CDP-M33 or CDP-C322M	CDP-M33 or CDP-C322M (optional)	CDP-M33 or CDP-C322M (optional)	CDP-M33 or CDP-C322M	CDP-M33 or CDP-C322M (optional)
Speakers	SS-D11			SS-D22		

SPECIFICATIONS

LBT-A10

General

Power requirements 110—120V/220—240VAC, adjustable with the VOLTAGE SELECTOR, 50 / 60 Hz
Power consumption 75W
Weight Approx. 6.9kg
Dimensions Approx. 355×290×325mm (w/h/d, including projections)

Supplied accessories

45-rpm adaptor (1) (only for Latin American and Australian models)
Remote commander RM-S171 (1)
FM wire antenna (1)
AM loop antenna (1)
Batteries Sony SUM-3 (NS) (2)

LBT-A20

General

Power requirements 110—120V/220—240VAC, adjustable with the VOLTAGE SELECTOR, 50 / 60 Hz
Power consumption 120W
Weight Approx. 8.9kg
Dimensions Approx. 355×380×325mm (w/h/d, including projections)

Supplied accessories

45-rpm adaptor (1) (only for Latin American and Australian models)
Remote commander RM-S271 (1)
FM wire antenna (1)
AM loop antenna (1)
Batteries Sony SUM-3 (NS) (2)
Design and specifications are subject to change without notice.

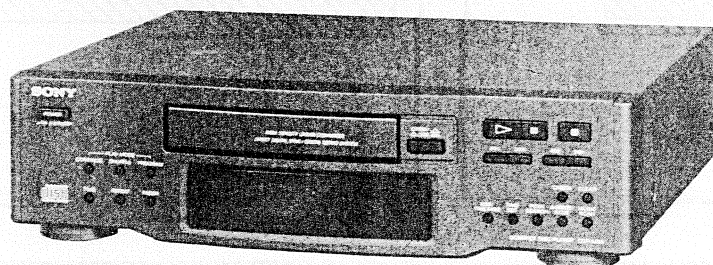
**COMPACT HiFi
STEREO SYSTEM**

SONY®

CDP-M33

SERVICE MANUAL

*US Model
AEP Model
UK Model
E Model
Australian Model*



Model Name Using Similar Mechanism	CDP - M54
CD Mechanism Name	CDM14L-5BD8A
Optical Pick-up Block Type	BU-5BD8A

SPECIFICATIONS

Compact disc player

Frequency response 2 Hz to 20 kHz 0.5 dB
Signal-to-noise ratio More than 93 dB
Dynamic range More than 90 dB
Harmonic distortion Less than 0.008 %
Channel separation More than 90 dB

Outputs

LINE OUT (FIXED)

Output level 2 V (at 50
kiloohms)
Load impedance over 10
kiloohms

General

Power requirements U.S. model:
120 V AC, 60 Hz
UK, Australian model:
240 V AC, 50 Hz
AEP, Italian model:
220 - 230 V AC, 50/60 Hz
E, Saudi Arabia Model:
110 - 120 V/220 - 240 V
AC, adjustable with the
voltage selector, 50/60 Hz

Power consumption 11 W

Dimensions (approx., including projections)

355 × 95 × 325 mm (w/h/d)
(14 × 3 7/8 × 12 1/8 inches)

Weight (approx.) 3.2 kg (7 lbs 1 oz)

Supplied accessories

Audio cord (1) (2 phono plugs - 2
phono plugs)
AC plug adaptor (1) (except for the United
States and Australia)

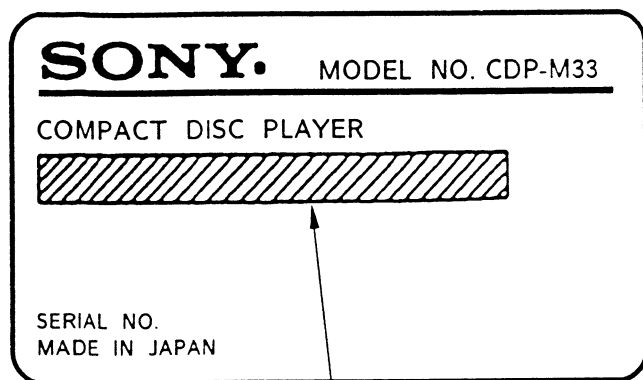
Design and specifications are subject to change
without notice.



COMPACT DISC PLAYER
SONY®

MODEL IDENTIFICATION

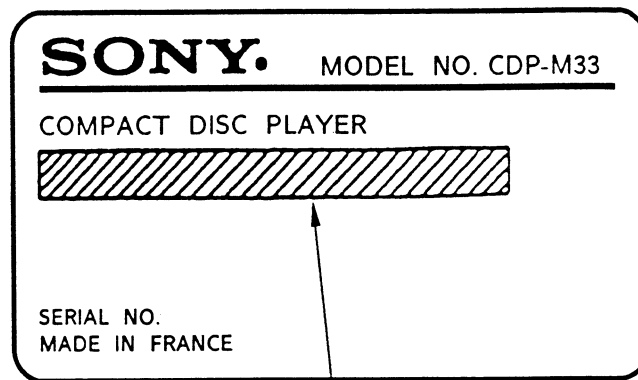
- Specification Label -



US Model : AC 120V 60Hz 11W

AEP, Italian Model : AC 220 - 230V ~ 50/60Hz

Australian Model : AC 240V ~ 50/60Hz

E, Saudi Arabia Model : AC 110 - 120V, 220 - 240V,
~ 50/60Hz 11W

AEP Model : AC 220 - 230V ~ 50/60Hz

UK Model : AC 240V, ~ 50/60Hz

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

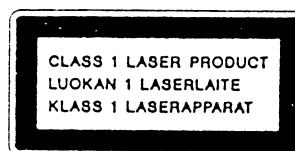
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

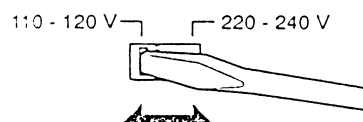
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30cm away from the objective lens.



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

E, Saudi Arabia Model

For customers of the model equipped with the voltage selector
Check to confirm that the voltage selector is set to the local power line voltage. If not, set the voltage selector to the correct position before connecting the AC power cord to a wall outlet.



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

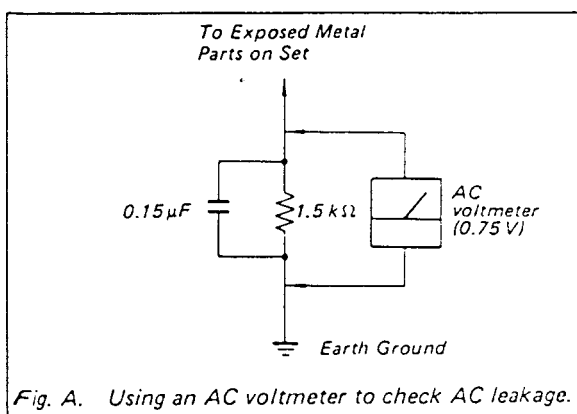




Fig. A. Using an AC voltmeter to check AC leakage.

TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		4
2. DISASSEMBLY		6
3. ELECTRICAL BLOCK CHECKING		7
4. DIAGRAMS		
4-1.	Block Diagram	9
4-2.	Circuit Boards Location	12
4-3.	Semiconductor Lead Layouts	12
4-4.	Printed Wiring Boards	13
4-5.	Schematic Diagram	17
4-6.	IC Block Diagram	21
5. EXPLODED VIEWS		
5-1.	Cabinet Section	23
5-2.	MD Section	25
5-3.	Pick-up Block Section	26
6. ELECTRICAL PARTS LIST		27

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

This section is extracted from
instruction manual.

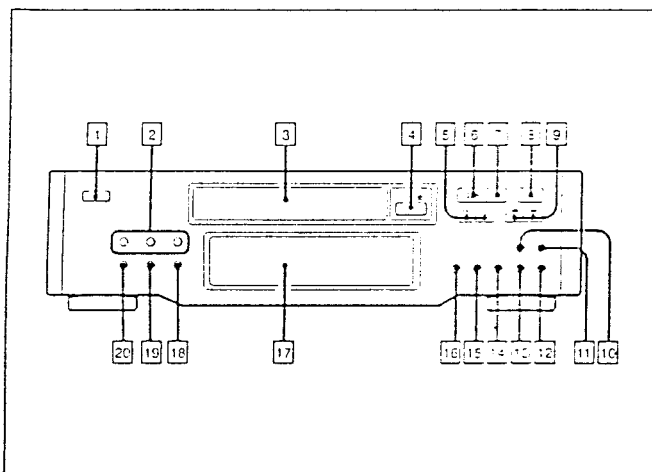
Identifying the Parts

Refer to the pages indicated in parenthesis
for details.

Front Panel

- 1 POWER switch (16)
- 2 Play mode buttons
 - CONTINUE button (24, 28, 32, 50)
 - SHUFFLE button (24, 28, 32, 50)
 - PROGRAM button (28, 42)
- 3 Disc tray (16)
- 4 ▲ OPEN/CLOSE button (16)
- 5 I◀◀/▶▶I (AMS*) buttons (20, 42)
- 6 ▶ (play) button (18)
- 7 || (pause) button (18)
- 8 ■ (stop) button (18)
- 9 ◀◀/▶▶ (manual search) buttons
(20, 40)
- 10 CHECK (program check) button (30)
- 11 CLEAR (program clear) button (30, 36)
- 12 MUSIC SCAN button (34)
- 13 A. SPACE/A. CUE button
(22, 54)
- 14 PEAK SEARCH button (54)
- 15 TIME SET button (48, 52)
- 16 EDIT/TIME FADE button (46, 52)
- 17 Display window (16)
- 18 FADER button (40)
- 19 REPEAT button (38)
- 20 TIME button (18)

* AMS is the abbreviation of Automatic
Music Sensor.



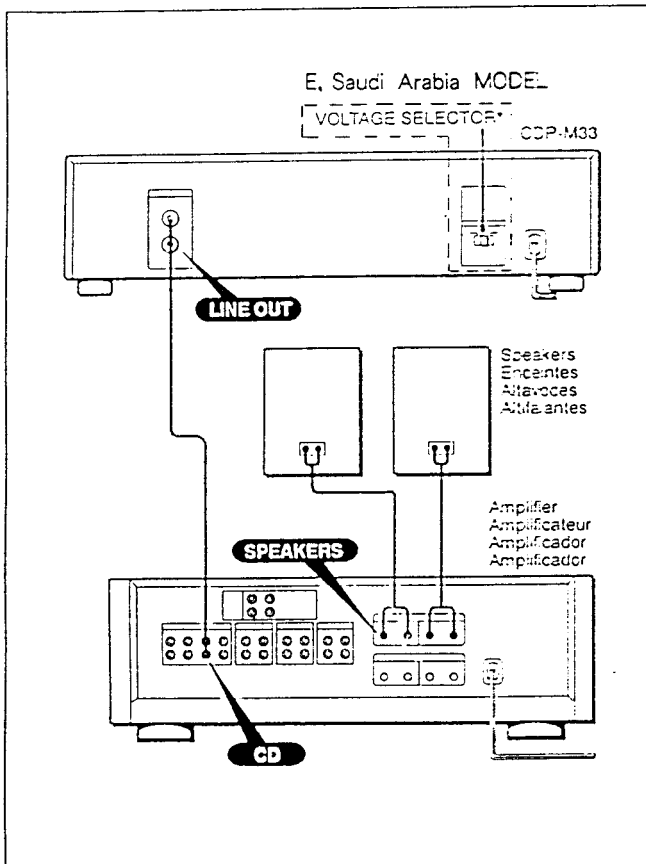
Hooking Up the System

Connect the unit to an amplifier as shown in Figure.

Notes on Connection

- Turn off the power of each unit before making connections. Connect the AC power cord last. For the model supplied with the plug adaptor, use it if the power cord plug does not match your wall outlet.
- Be sure to insert the plugs firmly into the jacks. Loose connection may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.

* **VOLTAGE SELECTOR**: Not equipped with the model for the United States and Australia.



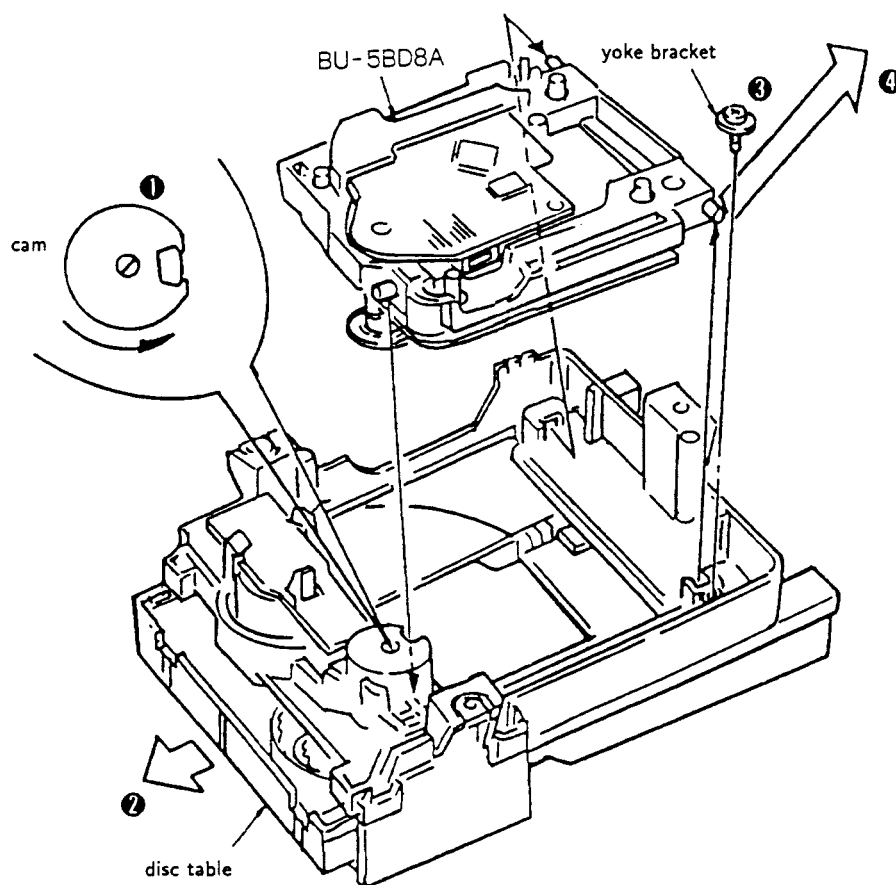
SECTION 2 DISASSEMBLY

CDP-M33

Note:

Follow the disassembly procedure in the numerical order given.

- ❶ Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
- ❷ Take off the disc table.
- ❸ Remove the yoke bracket.
- ❹ Remove the MD (BU-5BD8A) to the direction of arrow.

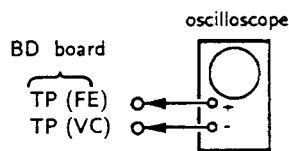


SECTION 3

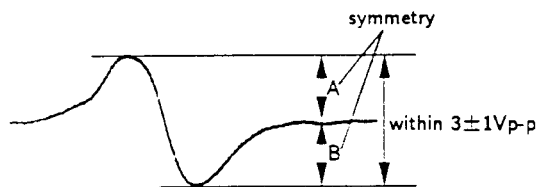
ELECTRICAL BLOCK CHECKING

Note :

1. CD Block basically constructed to operate with-out adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than $10M\Omega$ im-pedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check**Procedure :**

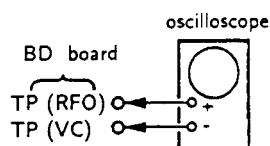
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3\pm 1V_{p-p}$.

S curve waveform

5. After check, remove the lead wire connected in step 2.

Note :

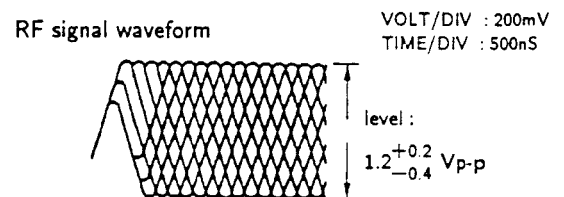
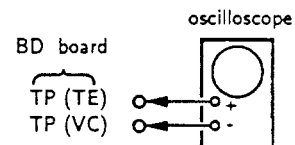
- Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check**Procedure :**

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

**E-F Balance Check****Procedure :**

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is sym-metrical on the top and bottom in relation to 0V, and check this level.

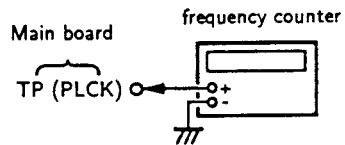
Traverse oscilloscope

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.

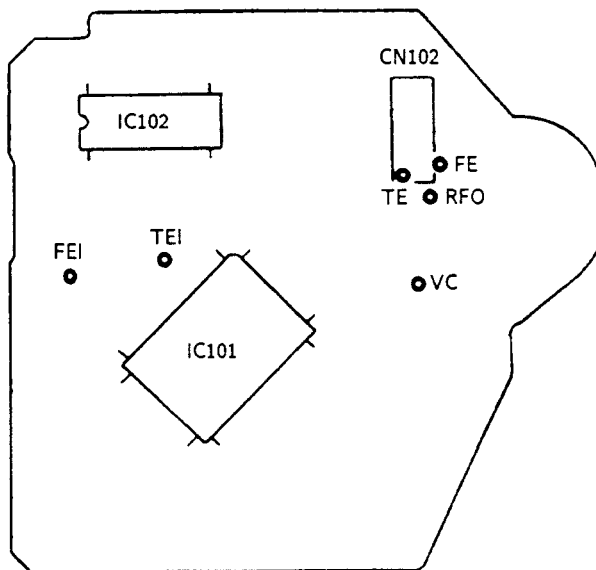


2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218 MHz.

Adjustment Location :

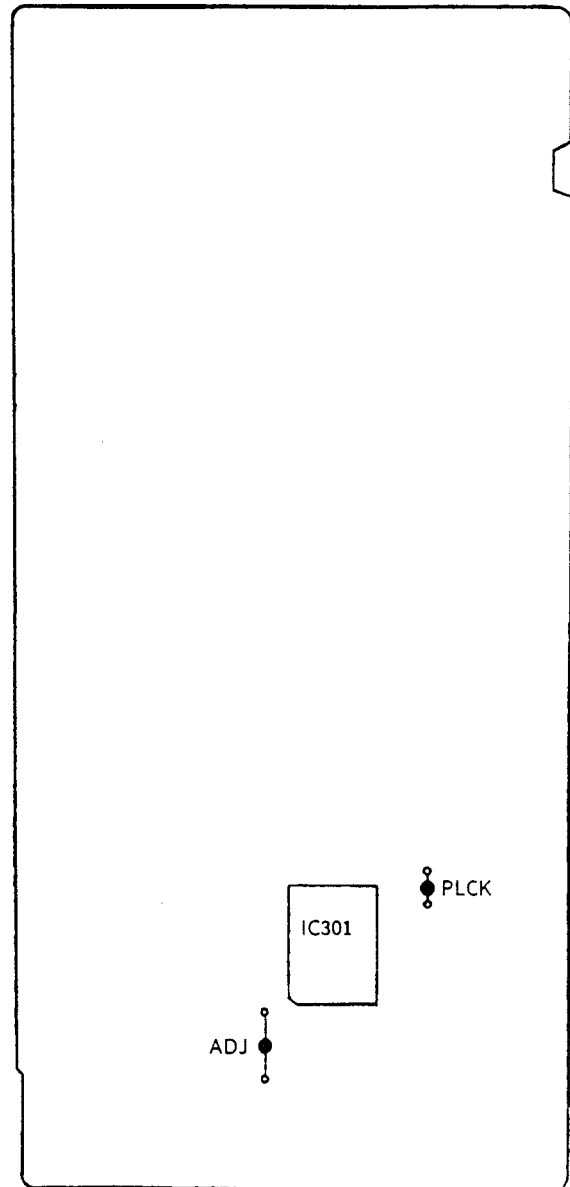
【BD BOARD】

- Solder side -



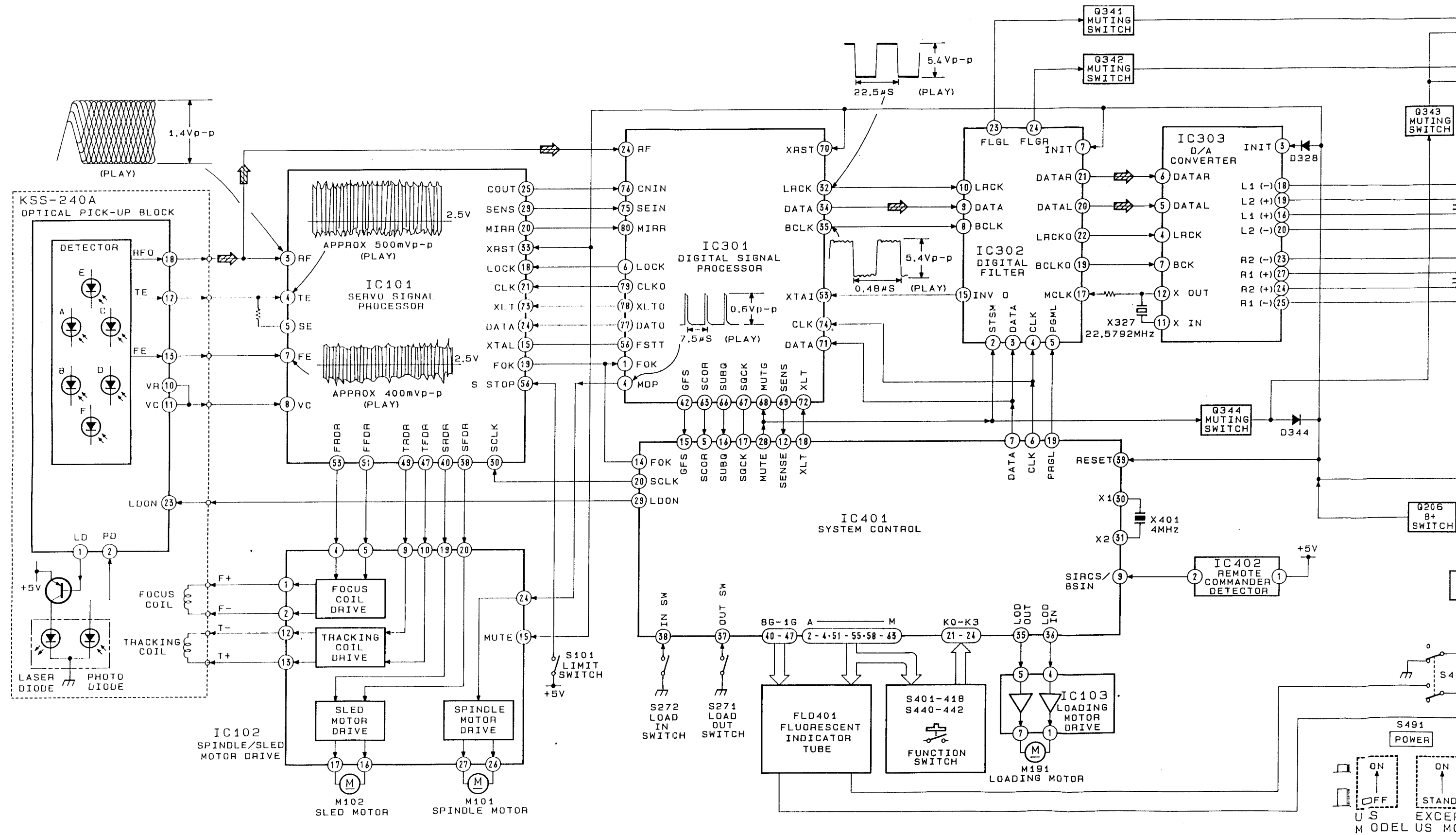
【MAIN BOARD】

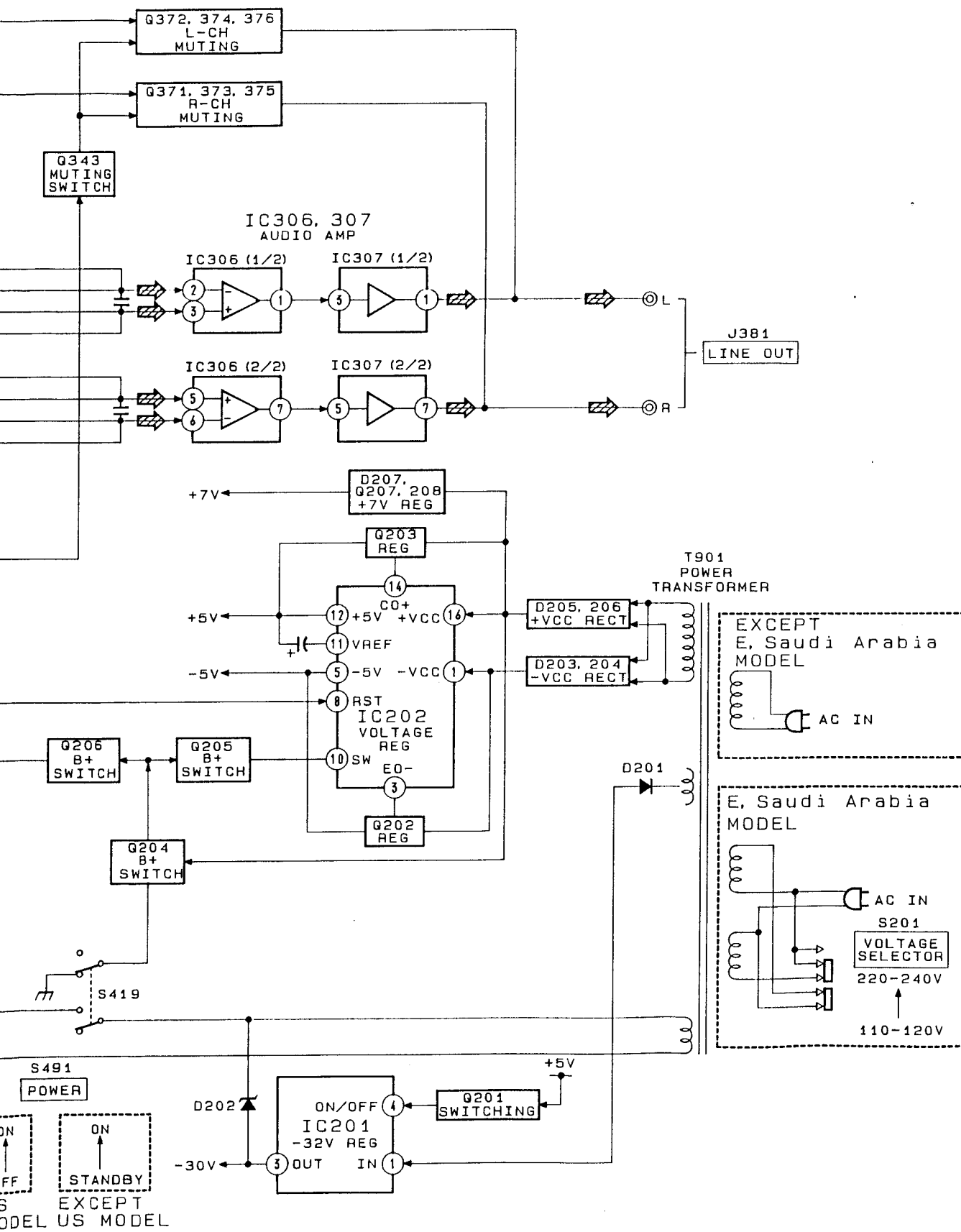
- Component side -



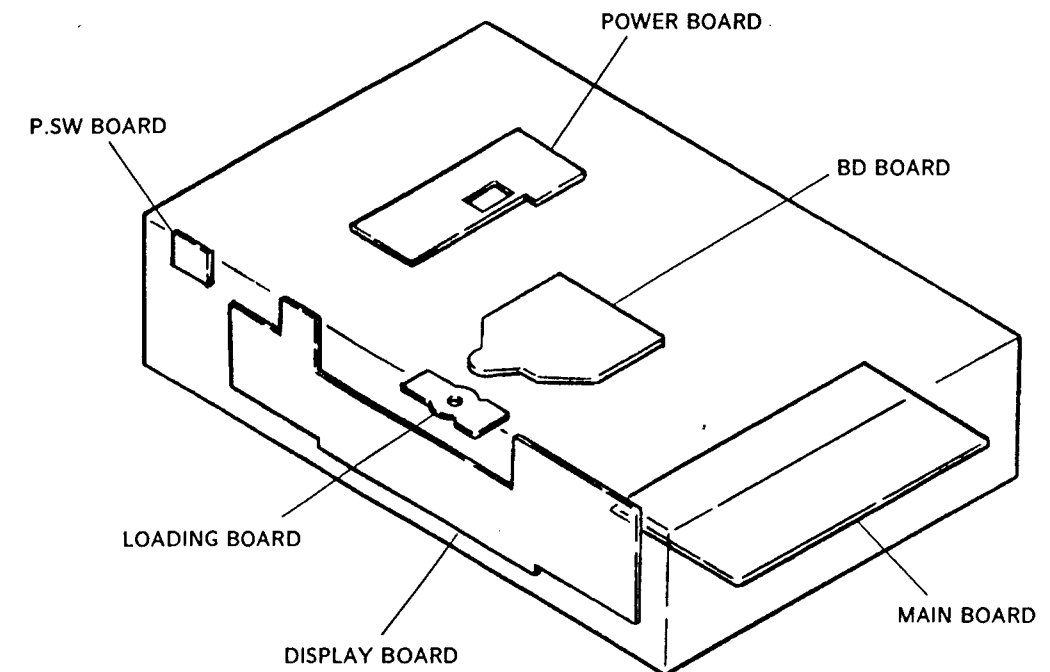
SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM

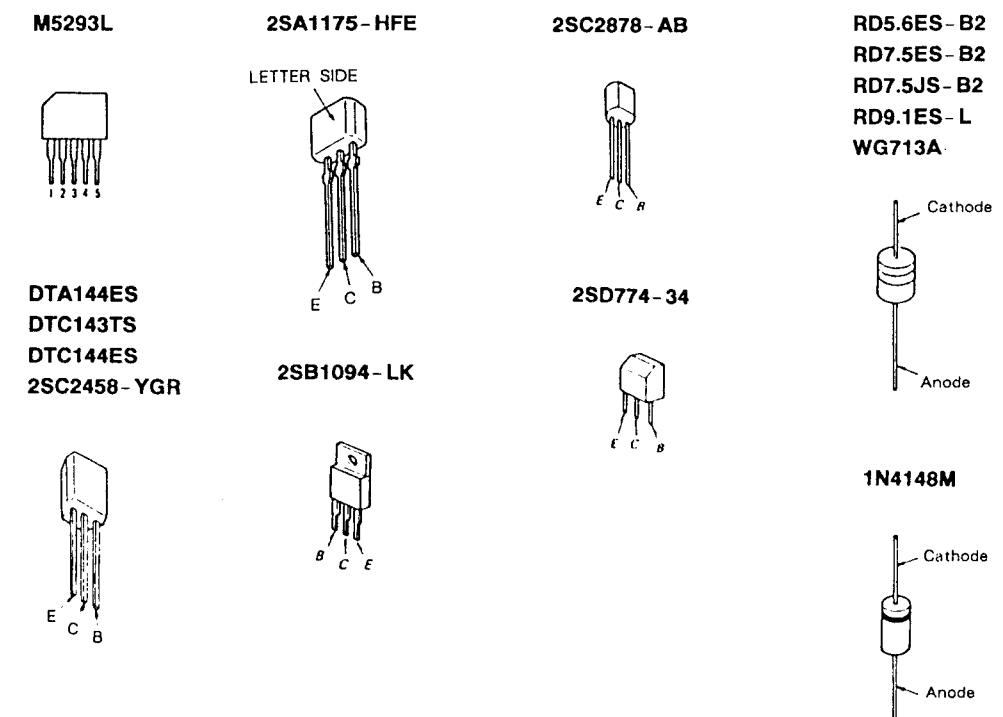




4-2. CIRCUIT BOARDS LOCATION



4-3. SEMICONDUCTOR LEAD LAYOUTS



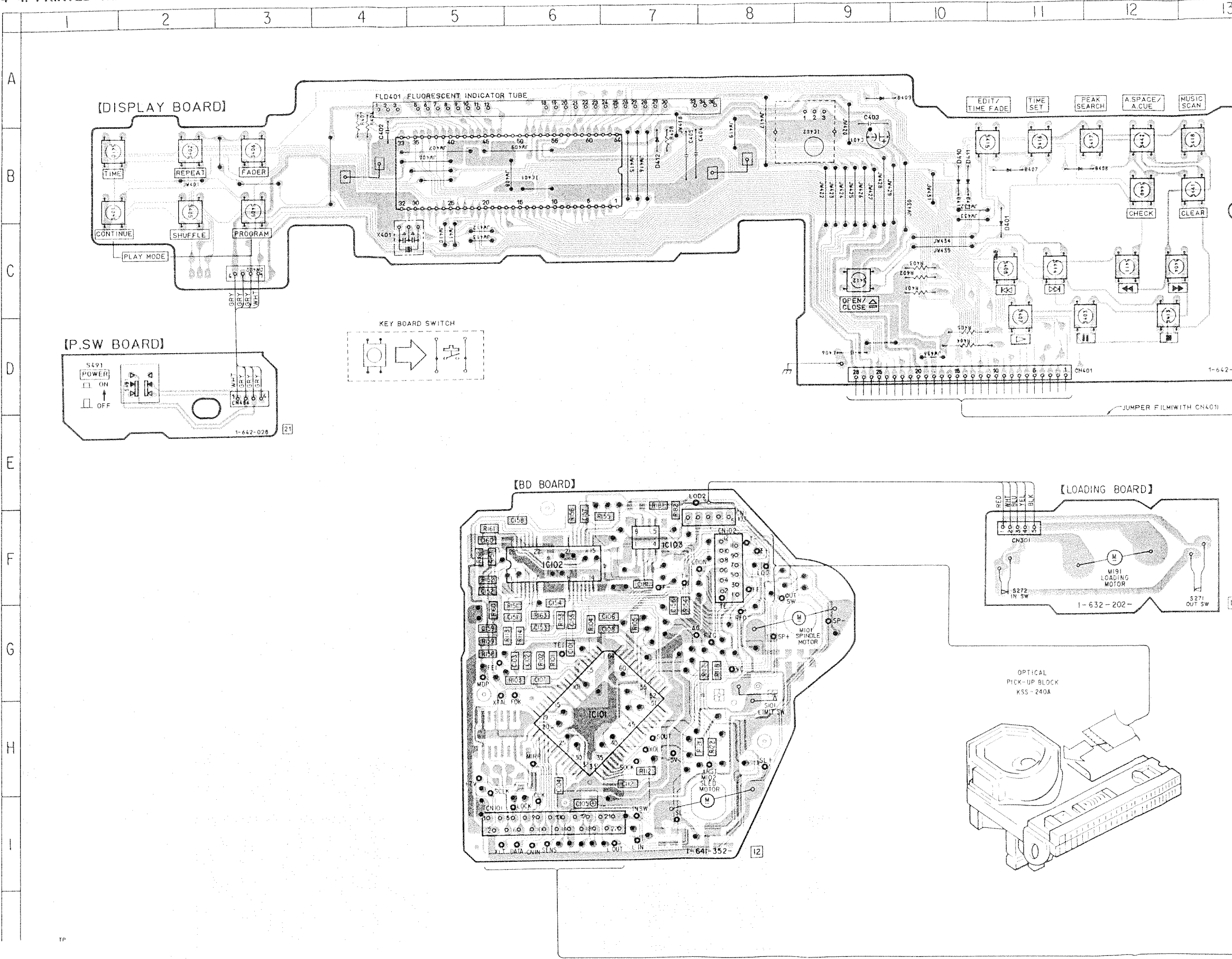
4-4. PRINTED WIRING BOARDS

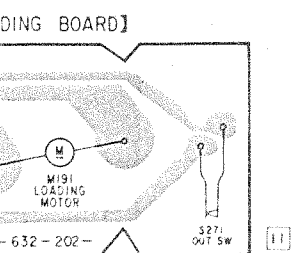
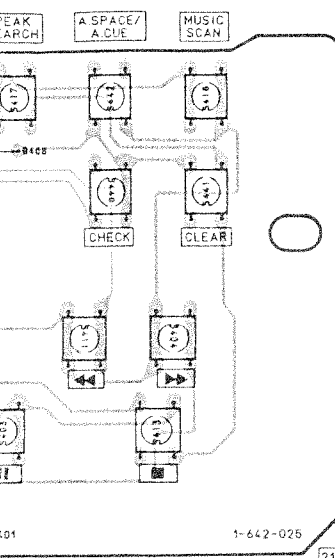
Semiconductor Location

Ref. No.	Location
D201	H-22
D202	J-22
D203	H-21
D204	H-21
D205	H-21
D206	H-20
D207	F-18
D208	C-18
D209	C-18
D328	F-15
D344	G-15
D401	C-11
D407	B-11
D408	B-11
D409	A-9
D410	B-10
D411	B-10
D412	B-7
IC101	H-6
IC102	F-6
IC103	F-7
IC201	I-22
IC202	E-17
IC301	H-16
IC302	G-16
IC303	E-16
IC306	C-16
IC307	C-16
IC401	B-6
IC402	B-9
Q201	I-22
Q202	D-18
Q203	D-17
Q204	G-17
Q205	G-17
Q206	G-17
Q207	F-18
Q208	F-18
Q341	D-15
Q342	D-15
Q343	C-15
Q344	G-15
Q371	B-16
Q372	C-18
Q373	B-16
Q374	B-18
Q375	B-16
Q376	B-18

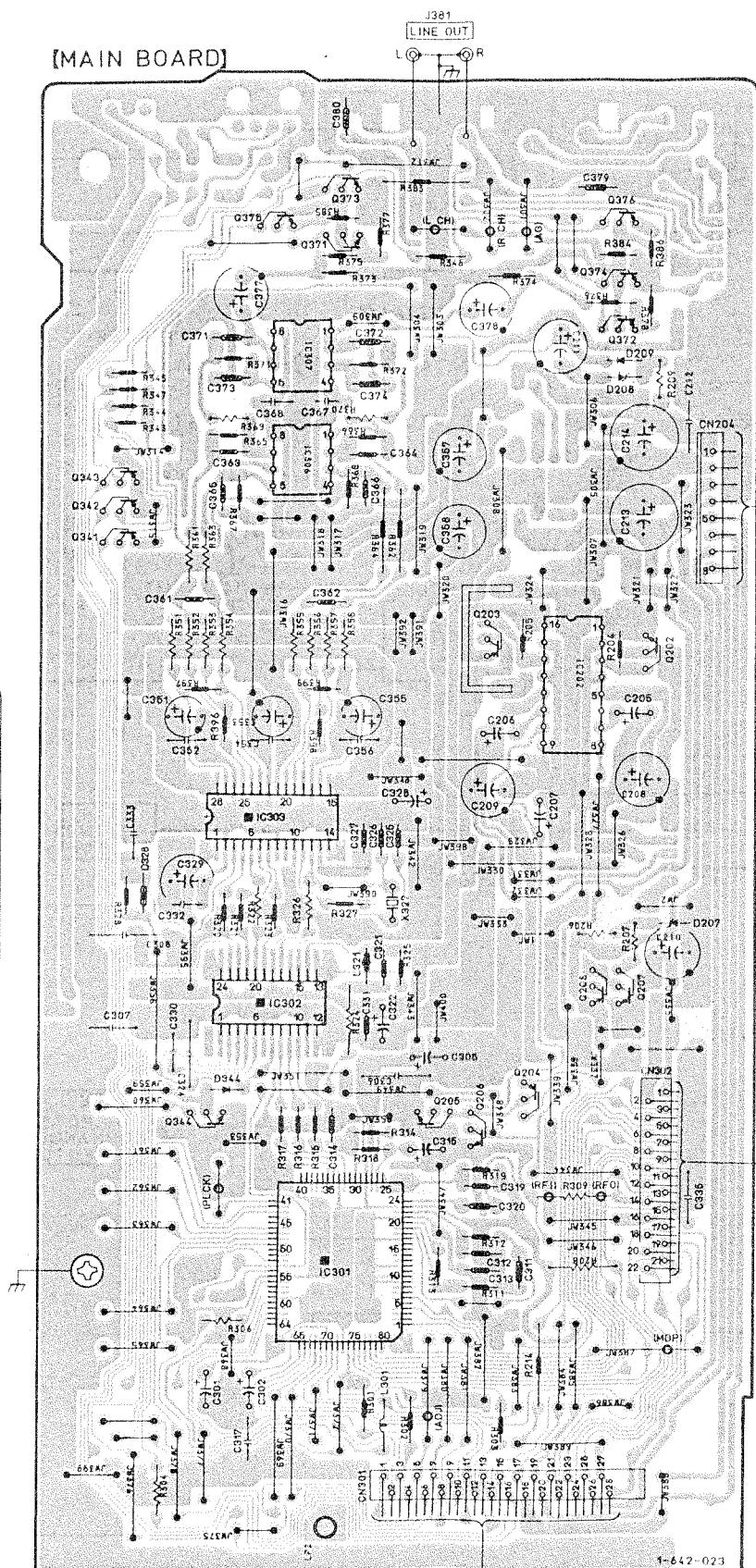
Note on Mounting Diagram :

- : Parts extracted from the component side.
- : Parts mounted on the conductor side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.

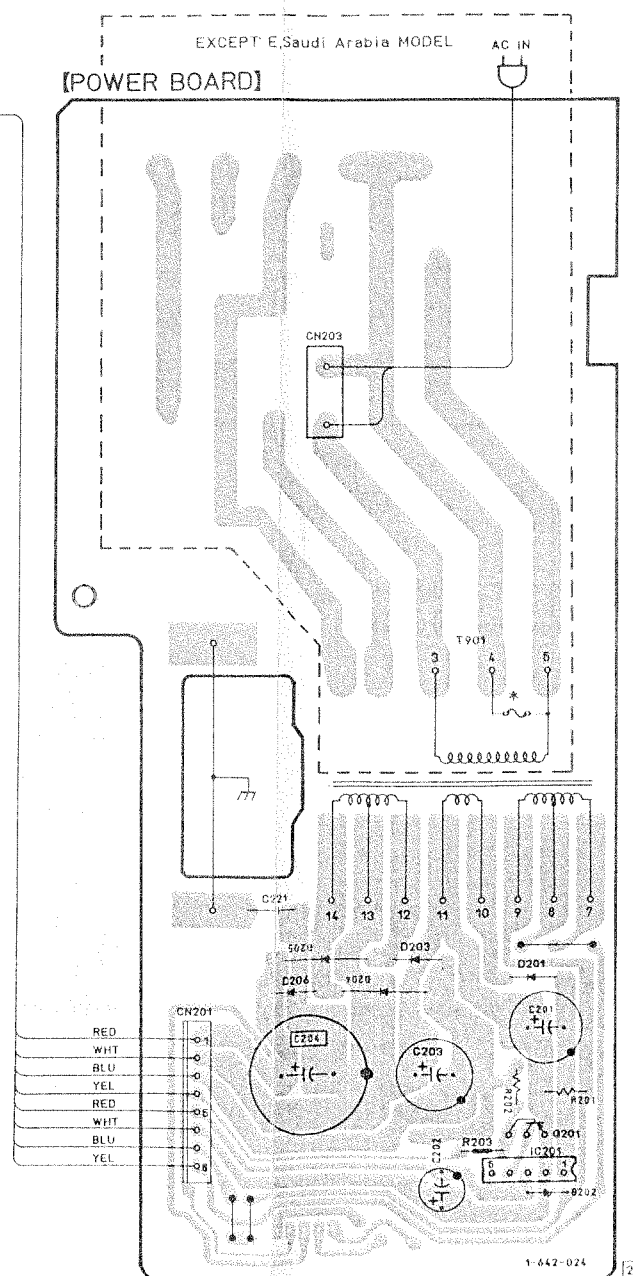




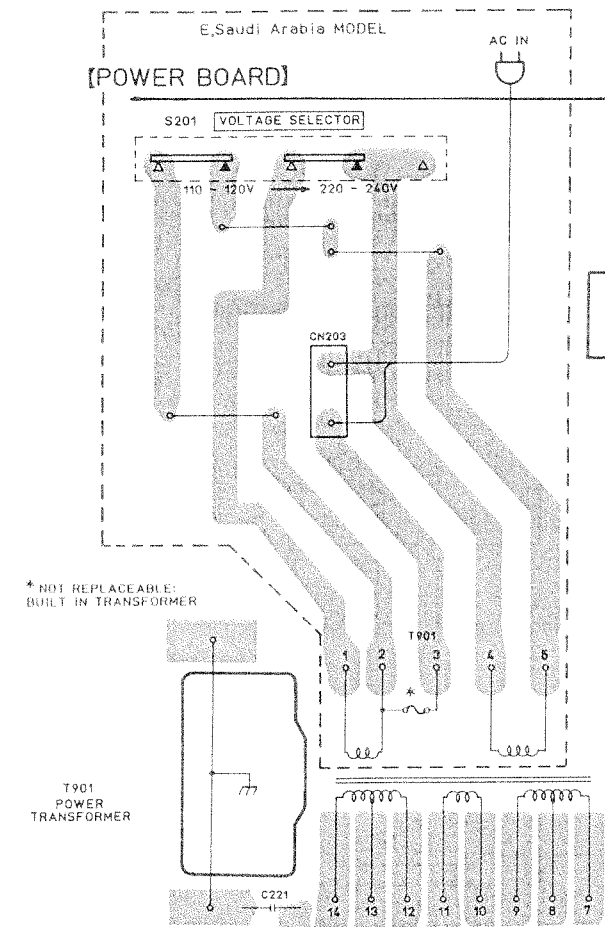
[MAIN BOARD]



[POWER BOARD]



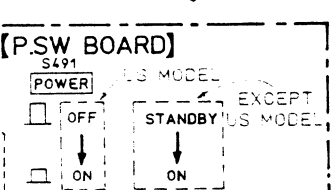
[POWER BOARD]



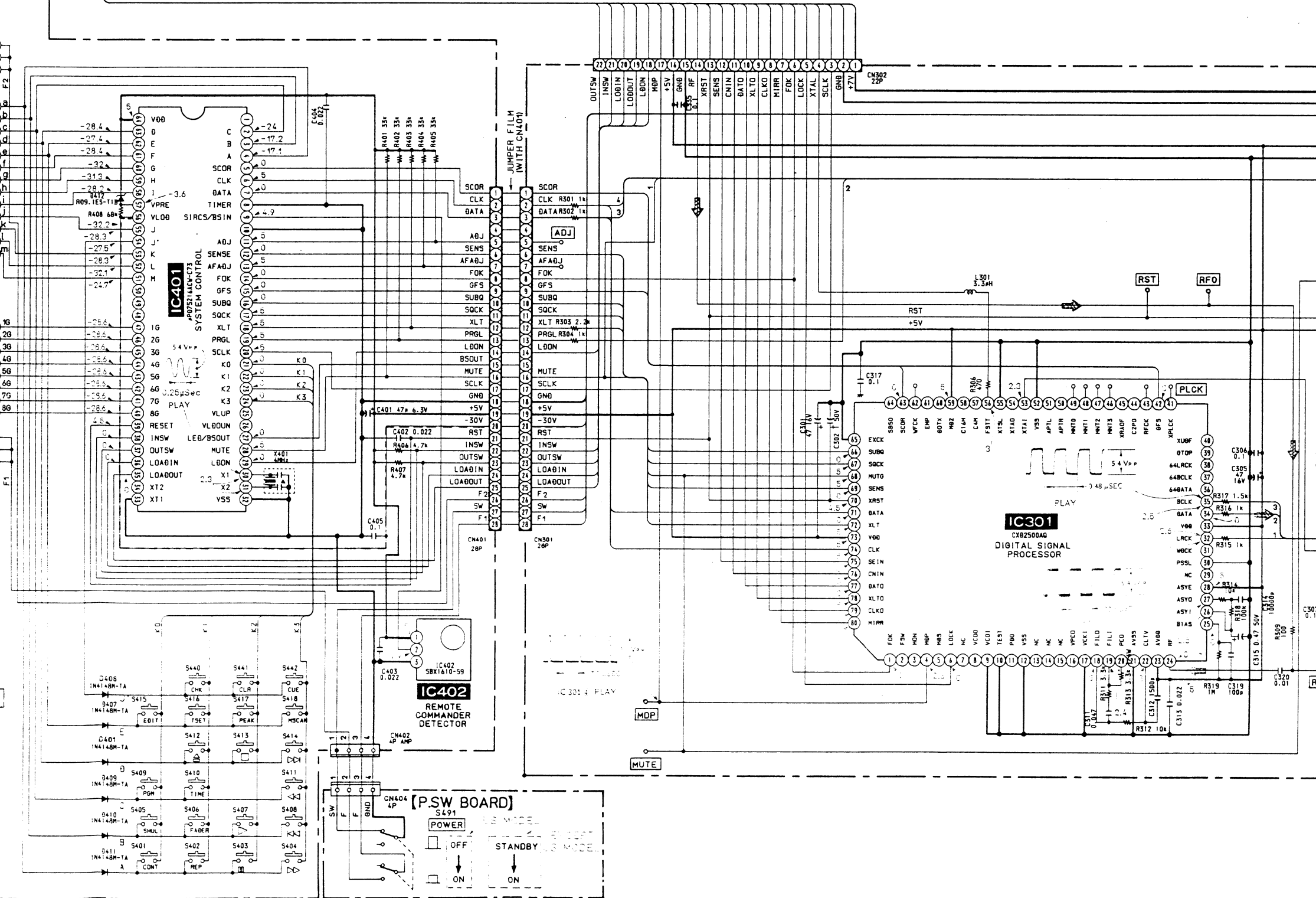
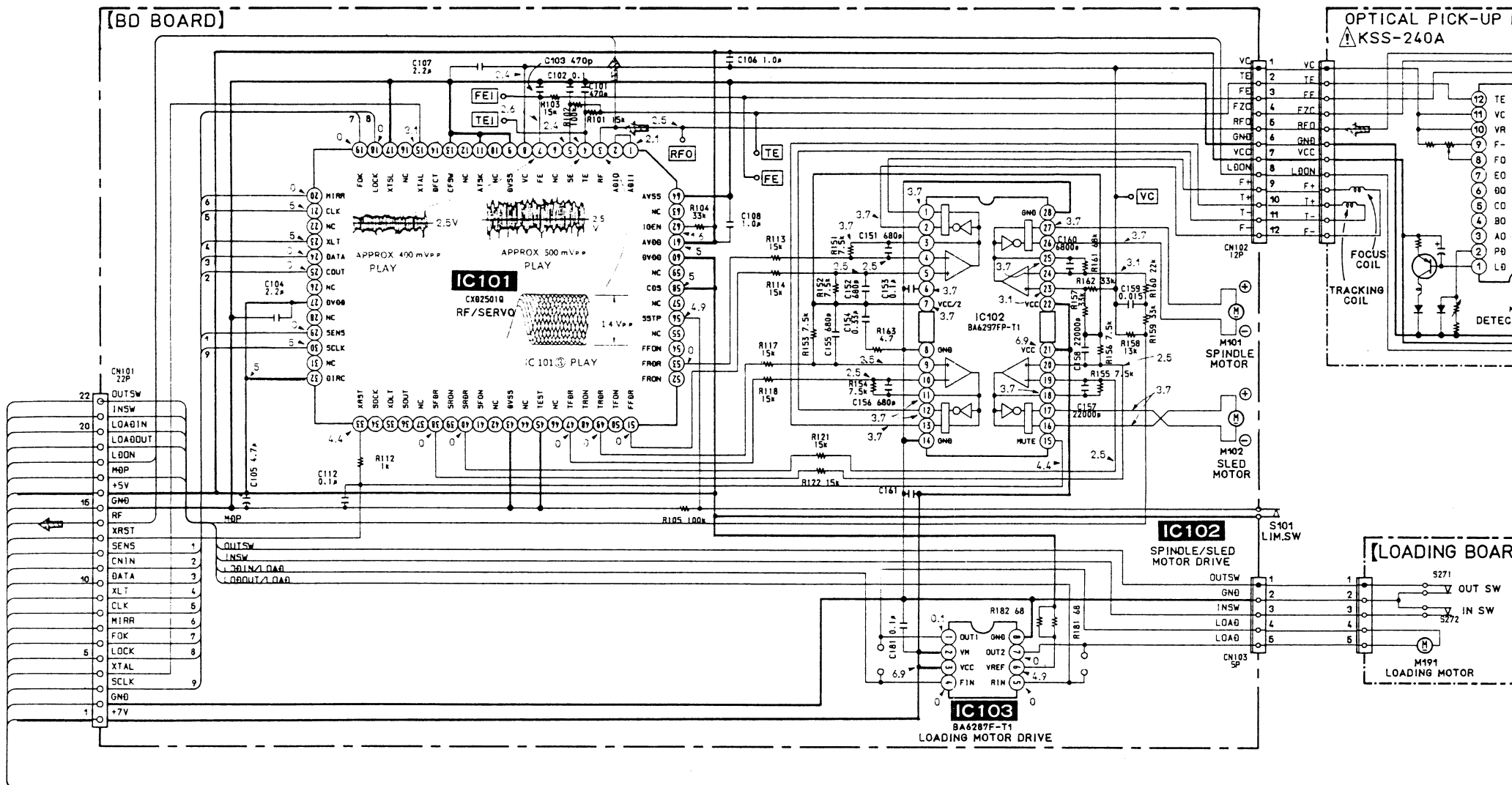
1	2	3	4	5	6	7	8
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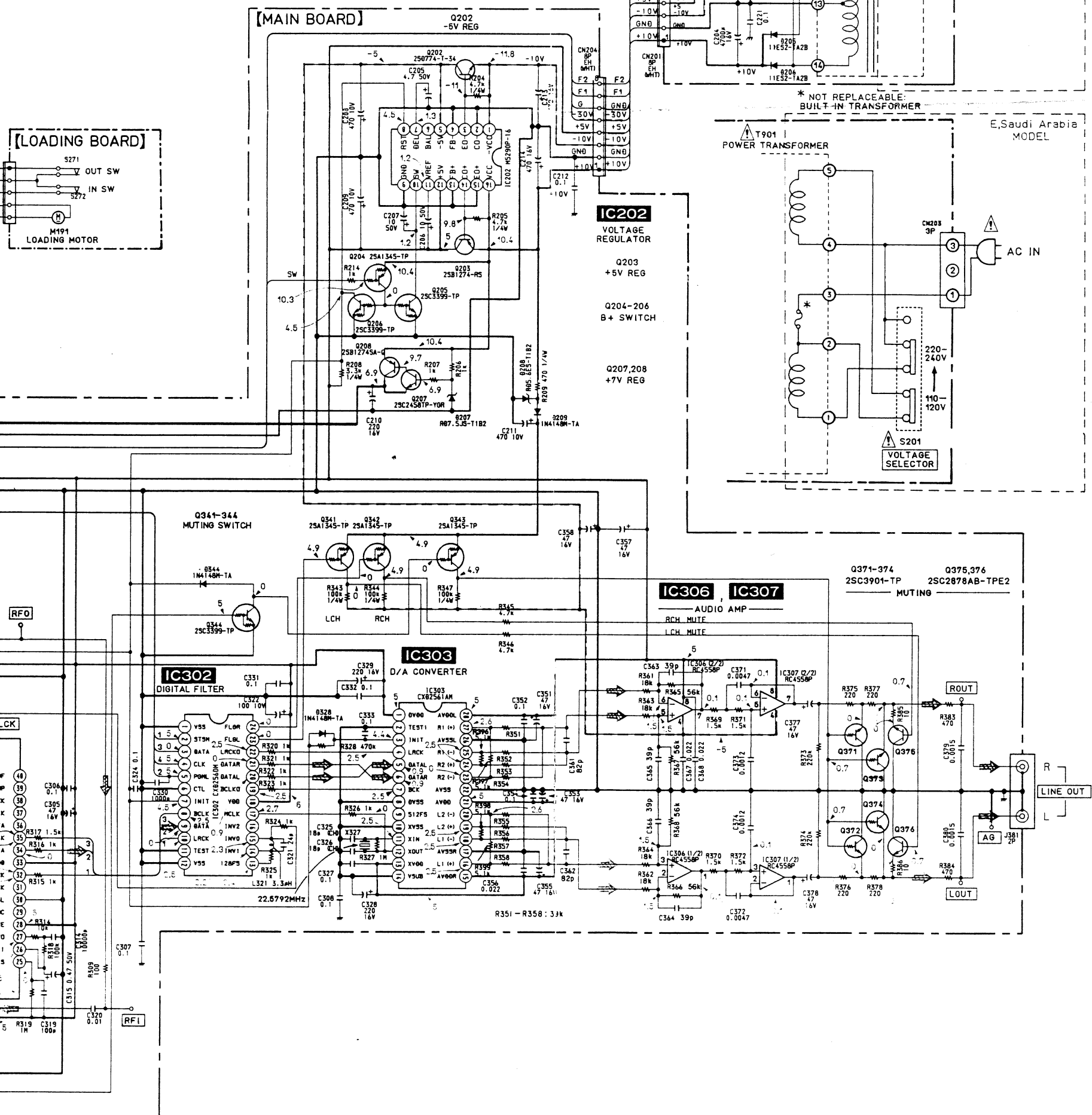
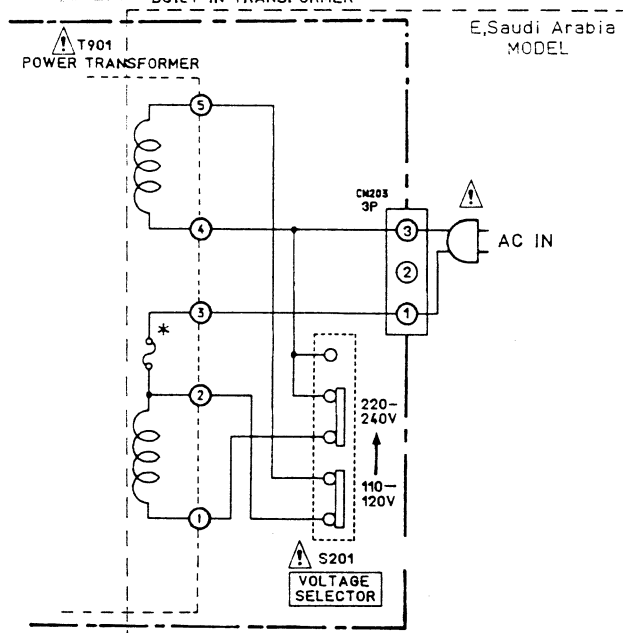
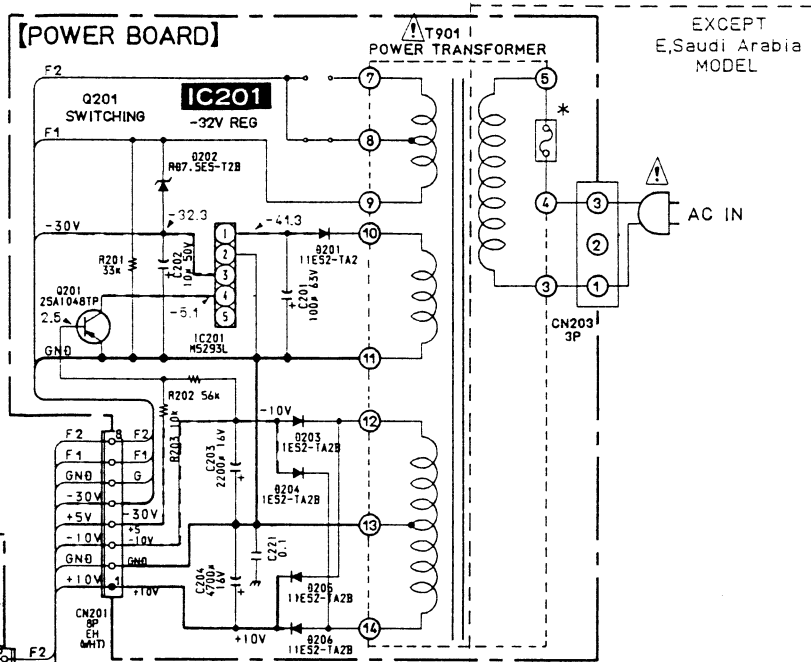
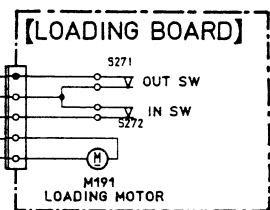
- All capacitors are in μF unless otherwise noted. pF: μpF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.

- V_{B+} : B + Line
- V_{B-} : B - Line
- Voltages and waveforms are do with respect to ground under no-signal (detuned) conditions.
- no mark : STOP
- Voltages are taken with a VOM (input impedance 10 M Ω).
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.



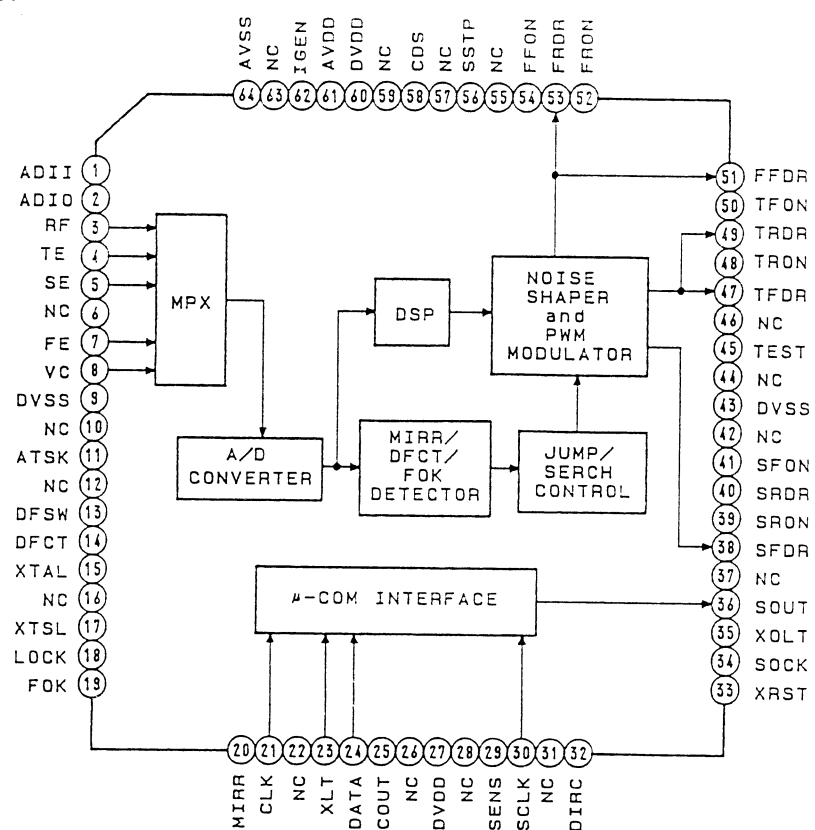
[BD BOARD]



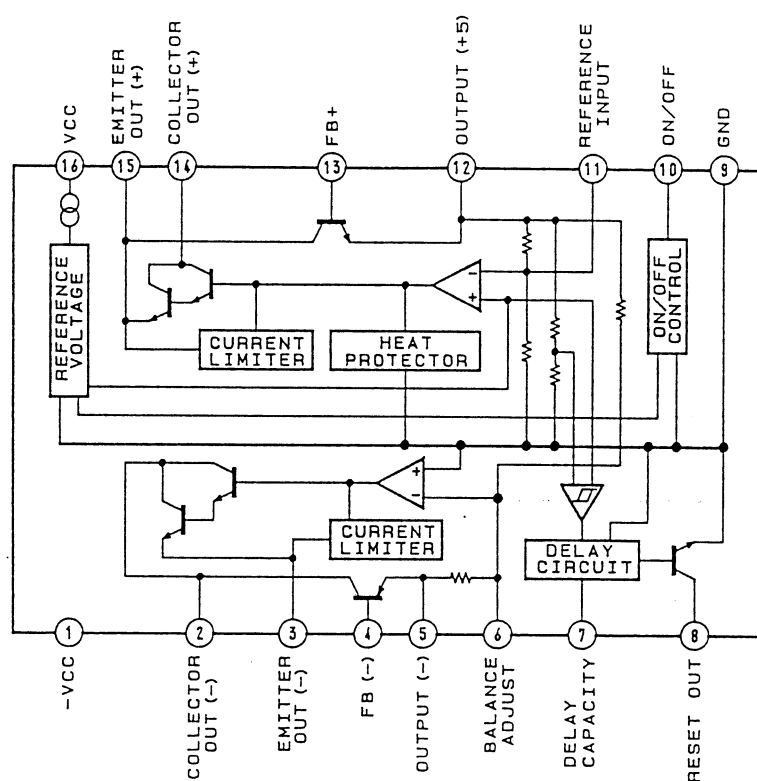


4-6. IC BLOCK DIAGRAMS

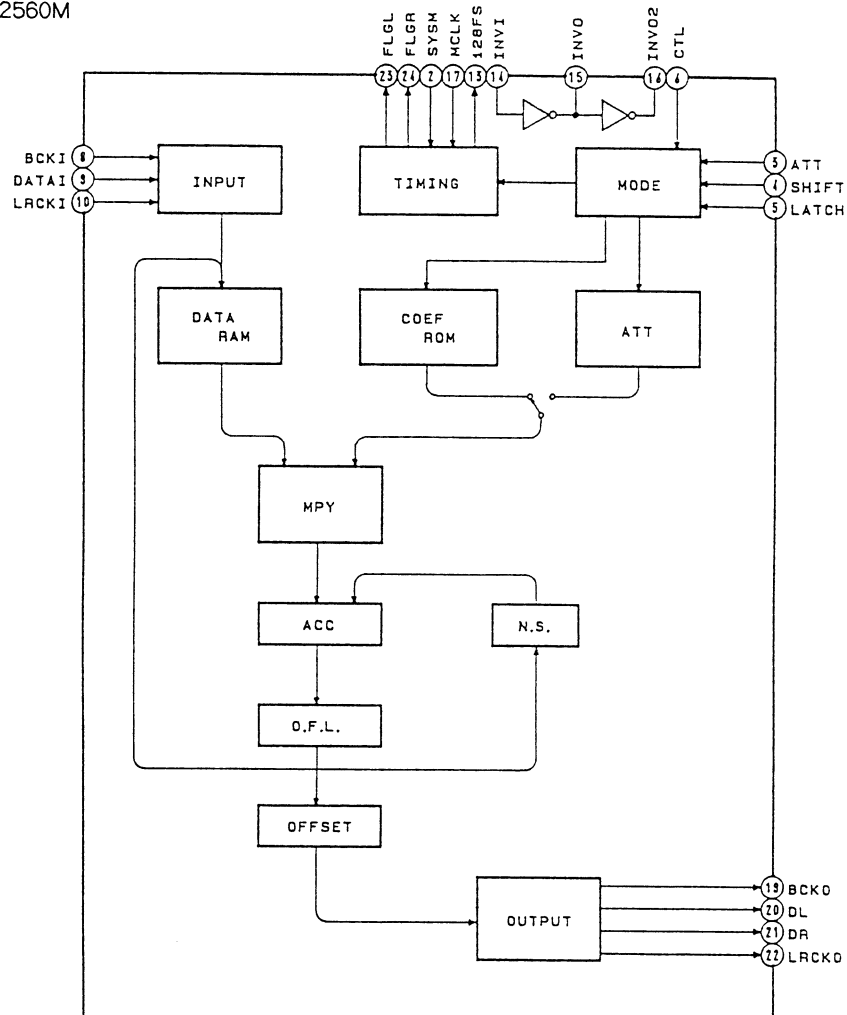
- IC101 CXD2501



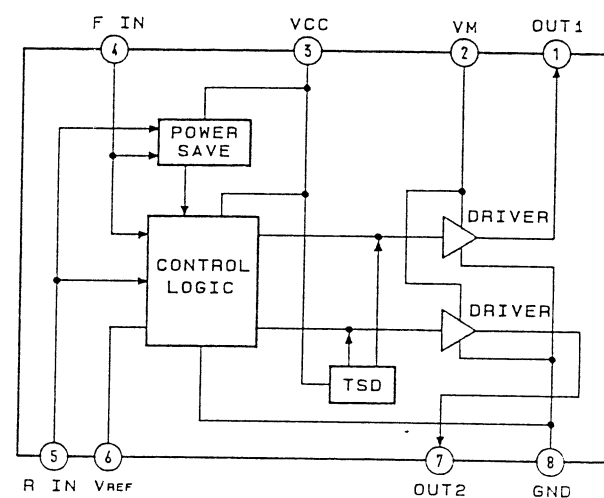
- IC202 M5290P-16



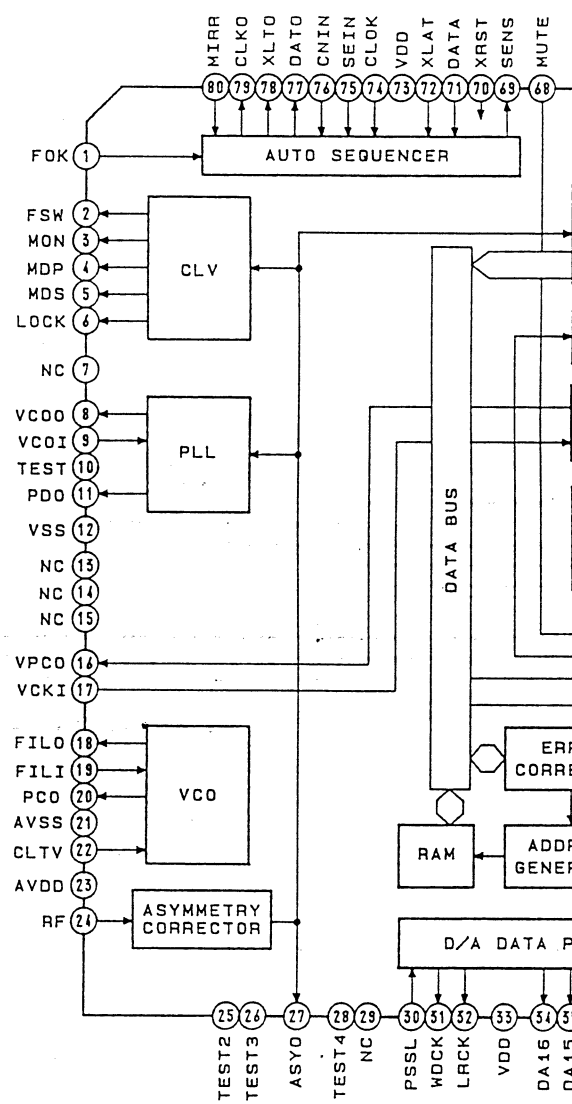
- IC302 CXD2560M



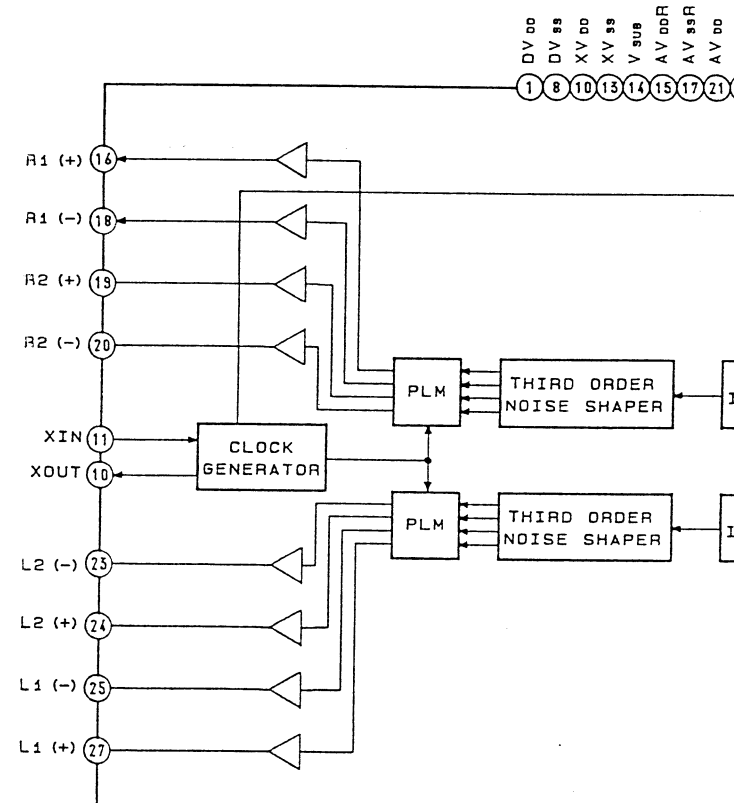
- IC103 BA6287F

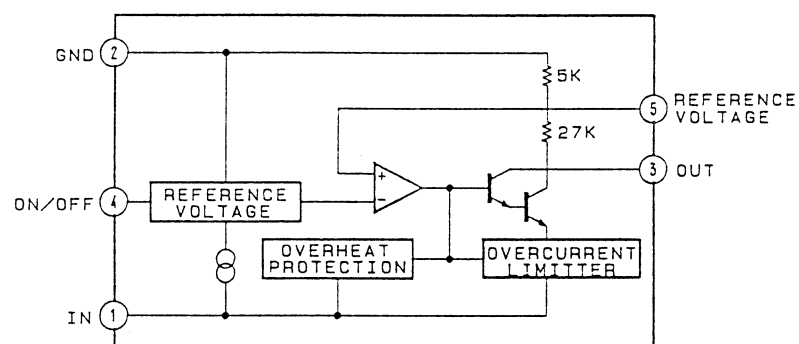


- IC301 CXD2500AQ



- IC303 CXD2561AM





The block diagram illustrates the internal architecture of the TMS320C25 DSP, centered around a **DATA BUS**. Key components and their connections are as follows:

- Input/Output Pins (Left):** 1 (FOK), 2 (FSW), 3 (MON), 4 (MDP), 5 (MDS), 6 (LOCK), 7 (NC), 8 (VCO0), 9 (VCO1), 10 (TEST), 11 (PDO), 12 (VSS), 13 (NC), 14 (VPC0), 15 (NC), 16 (VPC1), 17 (VCKI), 18 (FILO), 19 (FILI), 20 (PCO), 21 (AVSS), 22 (CLTV), 23 (AVDD), 24 (RF).
- Input/Output Pins (Top):** 68 (MUTE), 69 (SENS), 70 (XRST), 71 (DATA), 72 (XLAT), 73 (VDD), 74 (CLOCK), 75 (SEIN), 76 (CNIN), 77 (DATO), 78 (XLTO), 79 (CLKO), 80 (MIRR).
- Input/Output Pins (Right):** 41 (DA09), 42 (DA08), 43 (DA07), 44 (DA06), 45 (DA05), 46 (DA04), 47 (DA03), 48 (DA02), 49 (DA01), 50 (APTR), 51 (APTL), 52 (VSS), 53 (XTAI), 54 (XTA0), 55 (XTSL), 56 (FSTT), 57 (C4M), 58 (C16M), 59 (MD2), 60 (DOUT), 61 (EMPH), 62 (WFCK), 63 (SCOR), 64 (SBS0).
- Internal Blocks:**
 - AUTO SEQUENCER:** Receives FOK (pin 1) and controls pins 68-80.
 - CLV (Clock/Latch/Valid):** Receives pins 2-6 and controls pins 78-80.
 - PLL (Phase-Locked Loop):** Receives pins 8-11 and controls pins 78-80.
 - VCO (Voltage-Controlled Oscillator):** Receives pins 18-22 and controls pins 78-80.
 - ASMMETRY CORRECTOR:** Receives pin 24 and controls pins 78-80.
 - EFM DEMODULATOR:** Receives pins 65-67 and controls pins 68-69.
 - DIGITAL OUT:** Receives pins 59-60.
 - VARIABLE PITCH CONTROL:** Receives pins 57-58.
 - CLOCK GENERATOR:** Receives pins 53-56 and controls pins 57-58.
 - ERROR CORRECTOR:** Receives data from the DATA BUS and controls the ADDRESS GENERATOR.
 - ADDRESS GENERATOR:** Receives control from the ERROR CORRECTOR and controls the RAM.
 - RAM:** Receives data from the DATA BUS and controls the ADDRESS GENERATOR.
 - D/A DATA PROCESSOR:** Receives data from the DATA BUS and controls pins 41-49.

[illegible]

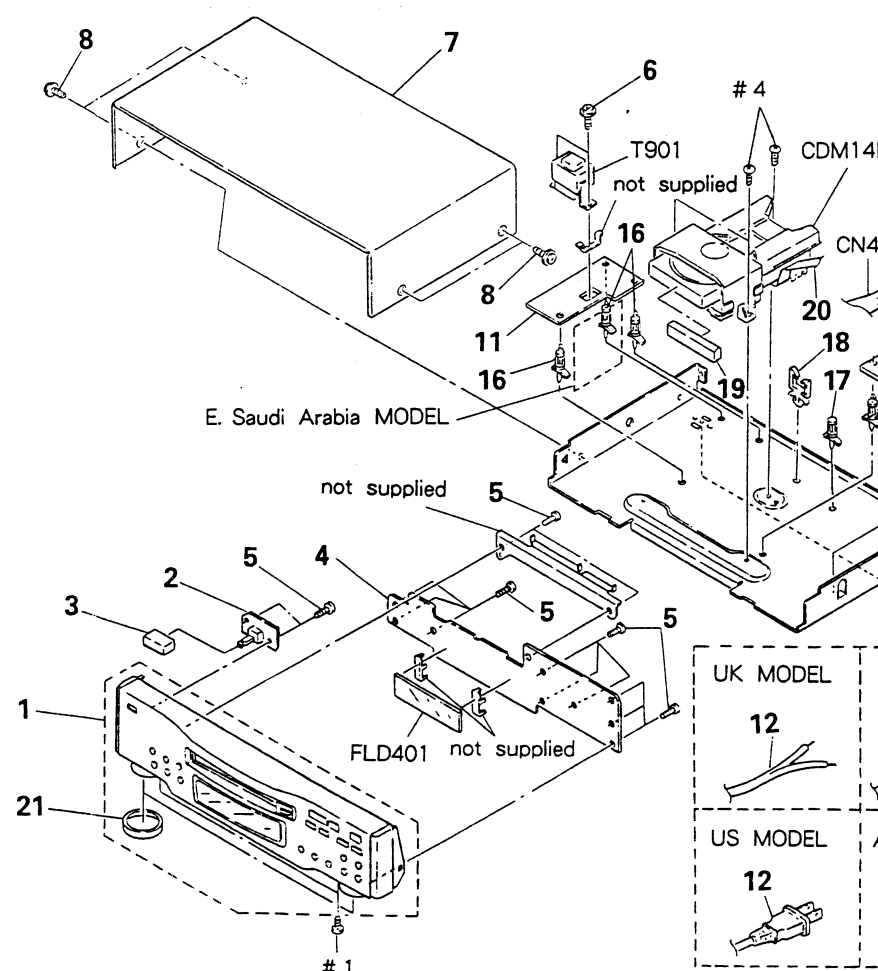
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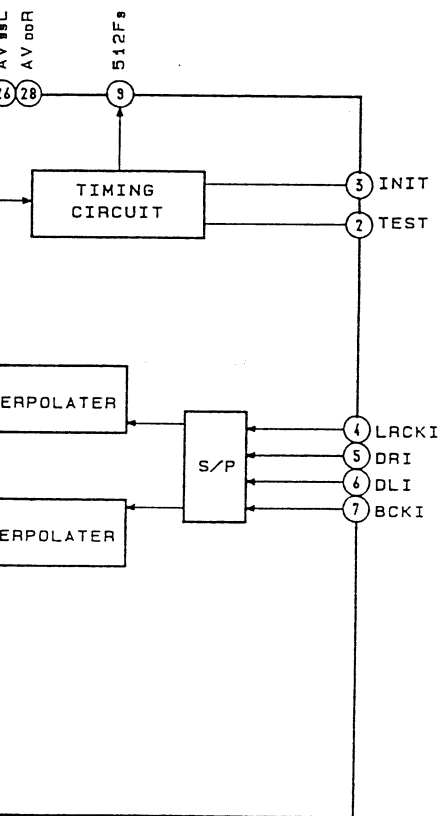
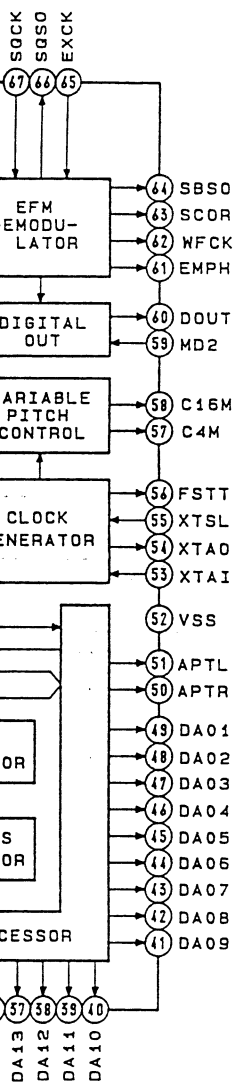
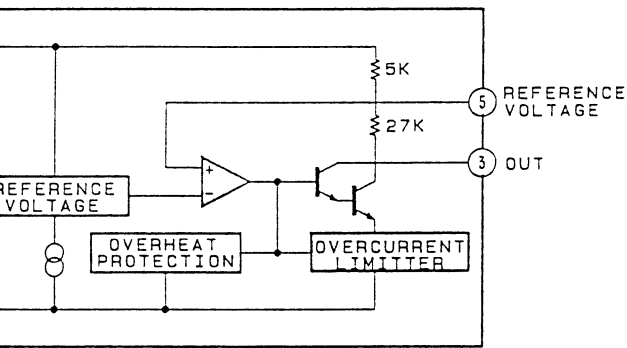
- NOTE:**
- - XX, - X mean standardized parts, so they may have some differences from the original one.
 - Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)...(RED)

↑ ↑

Parts color Cabinet's color
 - Items marked "*" are not standard parts since they are seldom required for routine service. Some delay should be anticipated when ordering such items.
 - The mechanical parts with no reference number in the exploded view will not be supplied.
 - Hardware (# mark) list is given at the last of this parts list.

5-1. CABINET SECTION





SECTION 5 EXPLODED VIEWS

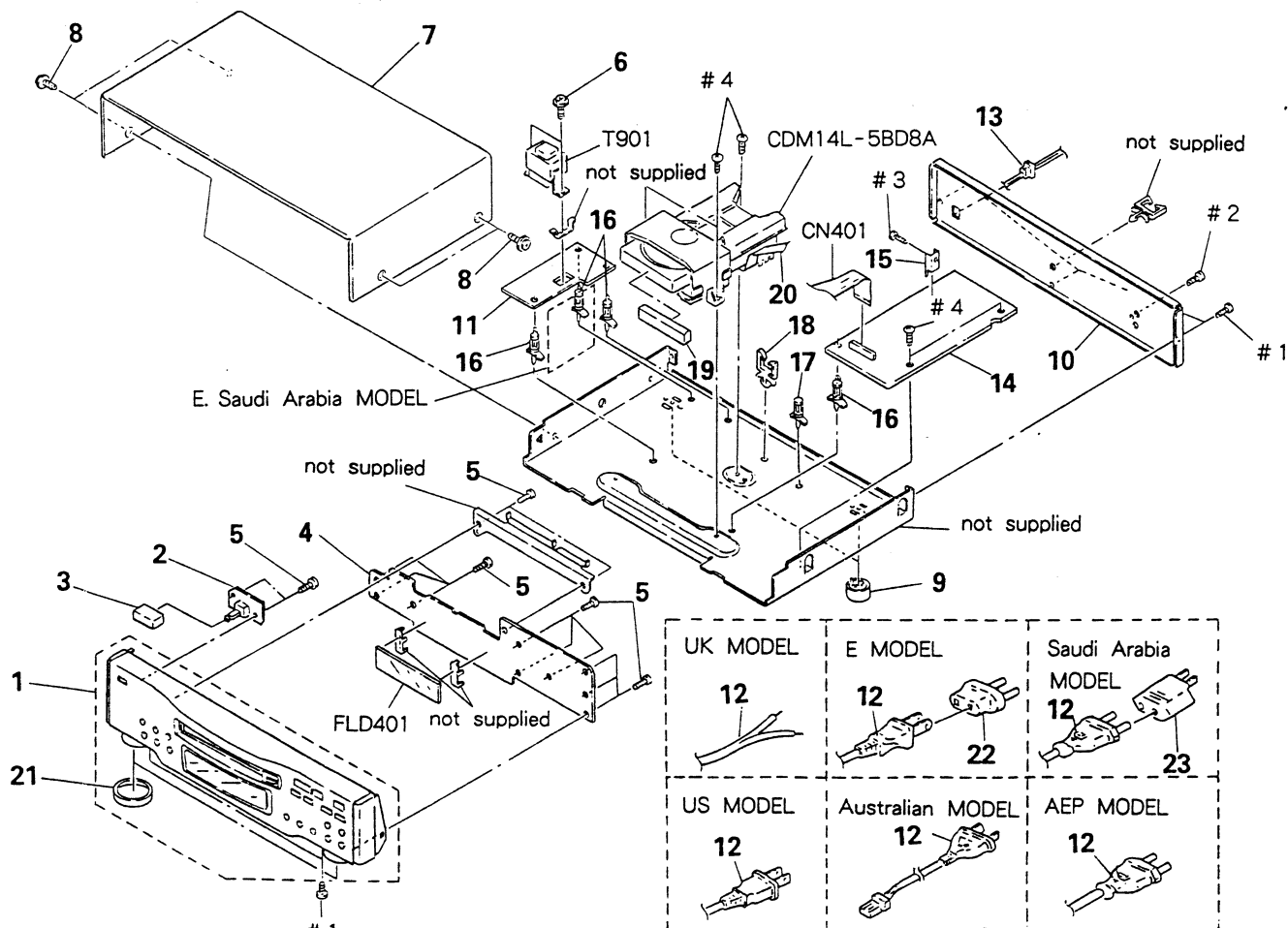
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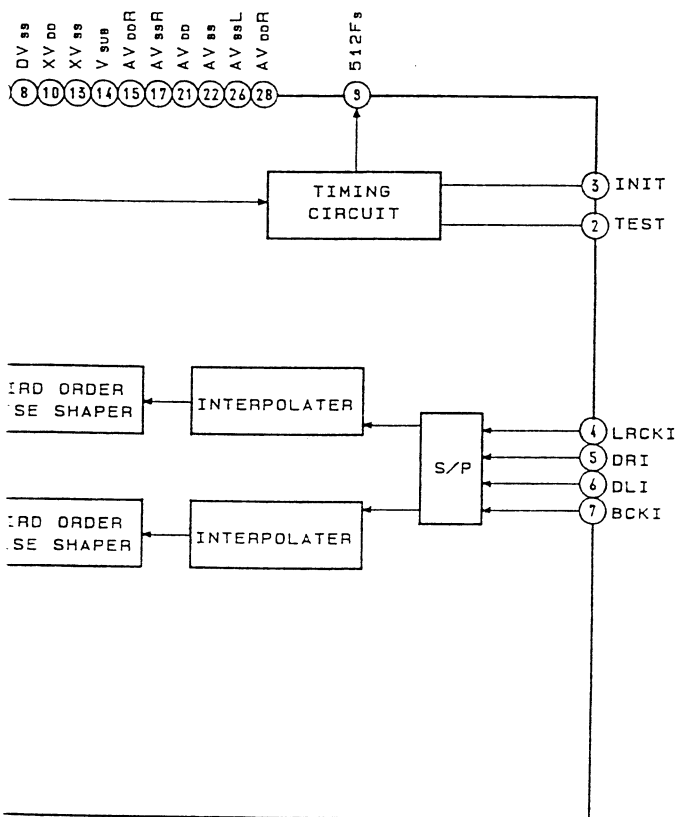
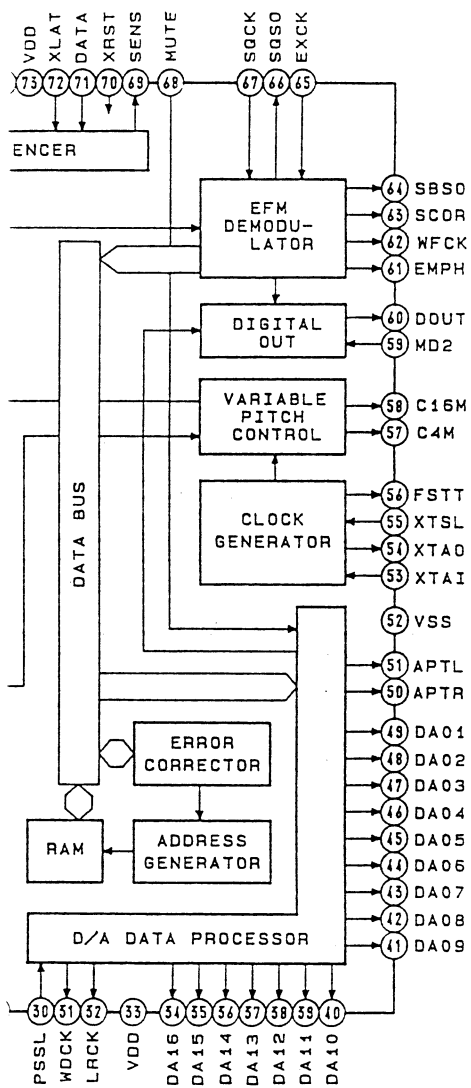
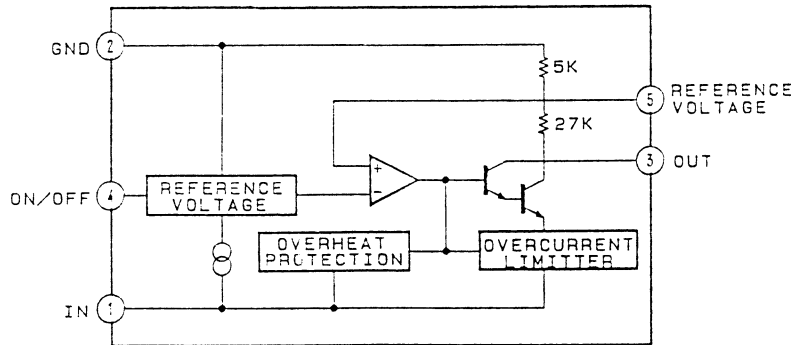
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)
Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

AUS : Australian
IT : Italian

5-1. CABINET SECTION





SECTION 5 EXPLODED VIEWS

NOTE:

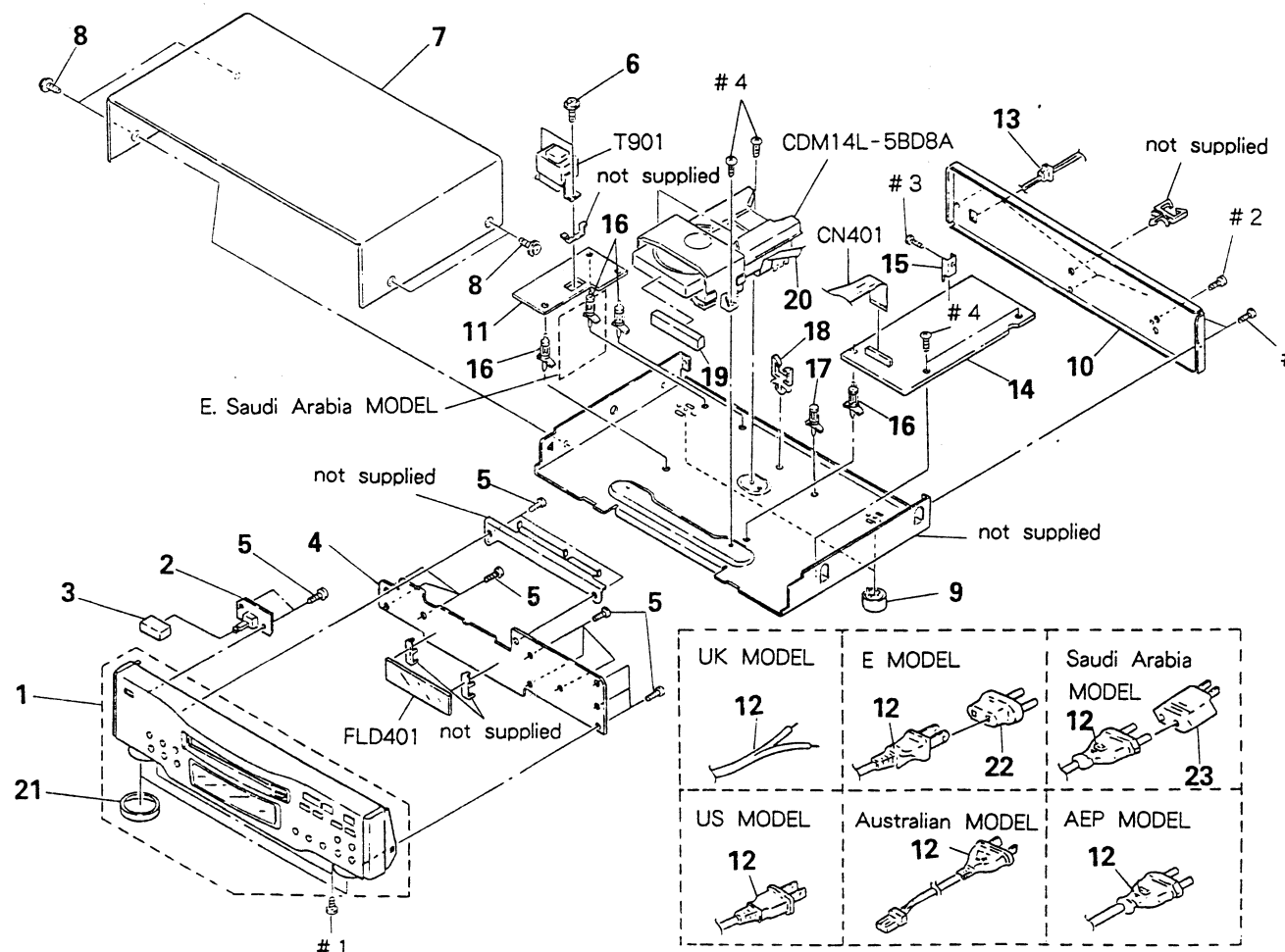
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE)...(RED)
Parts color Cabinet's color

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by a Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

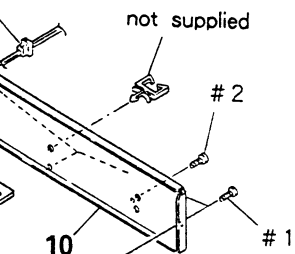
AUS : Australian
IT : Italian

5-1. CABINET SECTION

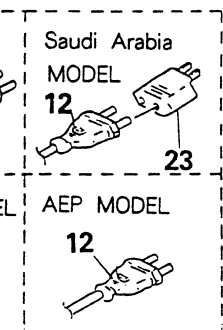


the components identified by mark
or dotted line with mark Δ are
critical for safety.
replace only with part number
specified.

AUS : Australian
IT : Italian



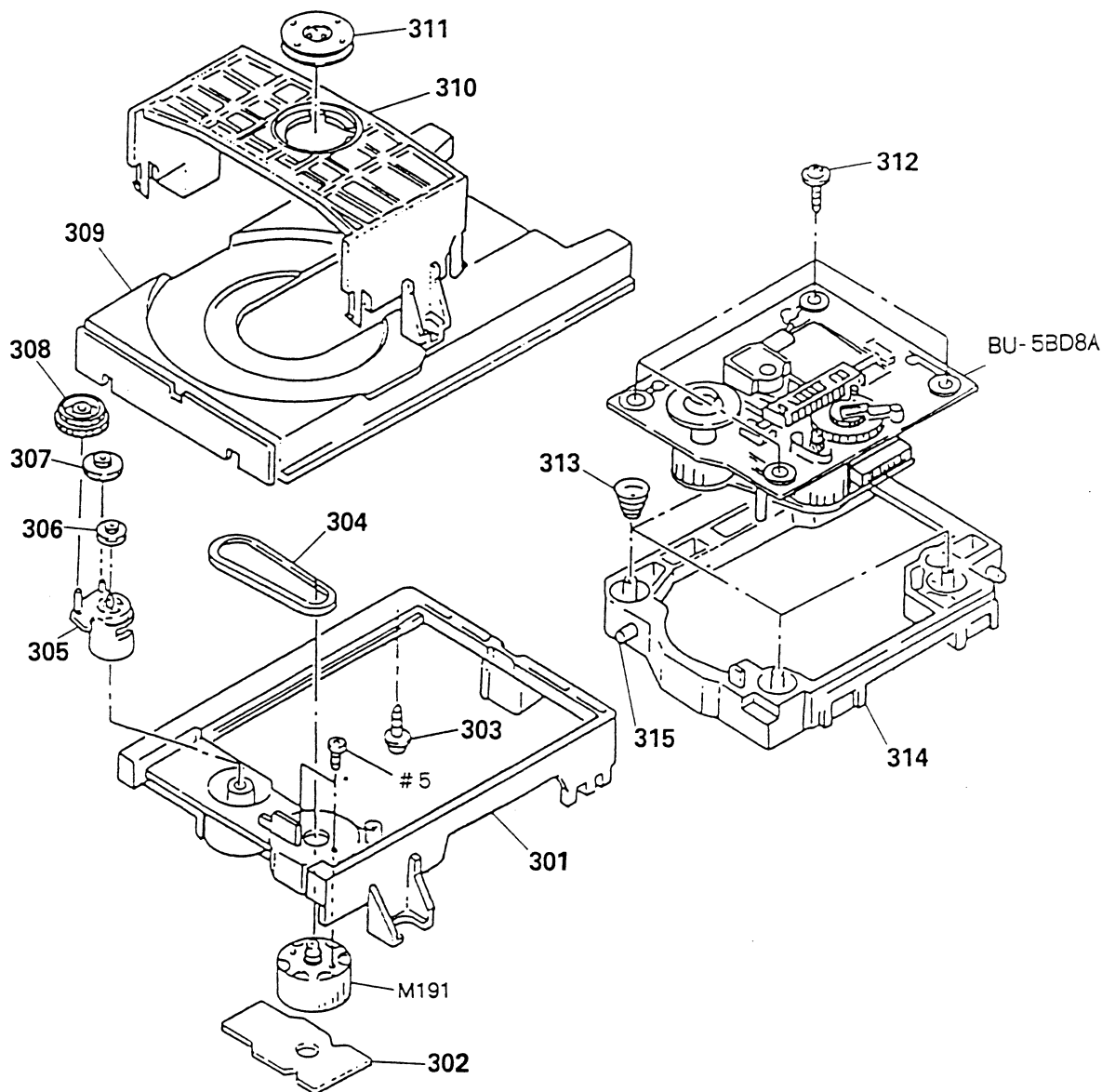
supplied



Ref. No.	Part No.	Description	Remark
1	X-4942-484-1	PANEL (ALS) ASSY, FRONT (GRAY) (MADE IN FRANCE) (AEP, UK)	
1	X-4942-484-2	PANEL ASSY, FRONT (GRAY) (MADE IN JAPAN) (AEP)	
1	X-4942-485-2	PANEL ASSY, FRONT (BLACK) (MADE IN JAPAN) (IT)	
1	X-4942-486-2	PANEL ASSY, FRONT (BLACK) (MADE IN JAPAN) (US)	
1	X-4942-487-2	PANEL ASSY, FRONT (MADE IN JAPAN) (E, AUS, Saudi Arabia)	
* 2	1-642-028-21	P. SW BOARD	
3	4-927-341-01	BUTTON (POWER)	
* 4	A-4649-117-A	DISP BOARD, COMPLETE	
5	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
6	4-886-821-11	SCREW, S TIGHT, +PTWH 3X6	
7	4-919-376-31	CASE (BLACK) (US, IT)	
7	4-919-376-81	CASE (GRAY) (AEP, UK, AUS, E, Saudi Arabia)	
8	3-363-099-01	SCREW (CASE +3X8 TP2) (MADE IN FRANCE) (AEP, UK)	
8	3-704-366-01	SCREW (CASE) (M3X8) (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
9	4-933-601-01	FOOT	
10	4-941-552-21	PANEL, BACK (MADE IN FRANCE) (AEP, UK)	
* 10	4-949-227-01	PANEL, BACK (MADE IN JAPAN) (AEP, IT)	
* 10	4-949-227-12	PANEL, BACK (MADE IN JAPAN) (E, Saudi Arabia)	
* 10	4-949-227-21	PANEL, BACK (MADE IN JAPAN) (AUS)	
* 10	4-949-227-33	PANEL, BACK (MADE IN JAPAN) (US)	
* 11	1-642-024-21	POWER BOARD	

Ref. No.	Part No.	Description	Remark
Δ 12	1-574-127-31	CORD, POWER (MADE IN FRANCE) (AEP)	
Δ 12	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
Δ 12	1-574-390-31	CORD, POWER (UK)	
Δ 12	1-575-651-21	CORD, POWER (MADE IN JAPAN) (AEP, IT, Saudi Arabia)	
Δ 12	1-590-836-11	CORD, POWER (US)	
Δ 12	1-575-653-21	CORD, POWER (E)	
* 13	3-703-571-12	BUSHING (S) (4516), CORD (E)	
* 13	3-703-244-00	BUSHING (2104), CORD (US, IT, AUS)	
13	4-946-787-01	BUSHING, CORD (MADE IN FRANCE) (AEP, UK)	
* 14	A-4649-118-A	MAIN BOARD, COMPLETE	
15	4-902-345-01	HEAT SHINK	
* 16	4-924-098-31	HOLDER, PC BOARD	
* 17	3-349-025-41	HOLDER, PC BOARD	
* 18	4-314-320-00	HOLDER, WIRE	
19	4-948-441-01	PANEL, LOADING (GRAY) (UK, AEP, E, AUS, Saudi Arabia)	
19	4-948-441-11	PANEL, LOADING (BLACK) (US, IT)	
20	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
* 21	4-921-918-11	PLATE, ORNAMENTAL (US, E, Saudi Arabia, AUS)	
22	1-569-007-11	ADAPTOR, CONVERSION (E)	
23	1-569-008-11	ADAPTOR, CONVERSION (Saudi Arabia)	
Δ T901	1-449-921-11	TRANSFORMER, POWER (US)	
Δ T901	1-449-922-11	TRANSFORMER, POWER (AEP, UK, IT, AUS)	
Δ T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia)	
CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
FLD401	1-519-681-11	INDICATOR TUBE, FLUORESCENT	

5-2. MD SECTION (CDM14L – 5BD8A)



Ref. No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
* 302	1-632-202-11	LOADING BOARD	
* 303	4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-948-894-01	TABLE, DISK (MADE IN FRANCE)	(AEP, UK)
309	4-949-336-01	TABLE, DISK (MADE IN JAPAN)	(US, AEP, E, IT, AUS, Saudi Arabia)

Ref. No.	Part No.	Description	Remarks
310	4-933-110-01	HOLDER (MG)	
* 311	1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPMW M2. 6X6)	
313	4-917-541-01	SPRING (B) (MADE IN FRANCE) (AEP. UK)	
313	4-948-503-01	SPRING (BU), COMPRESSION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFER (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY	

DISP

LOADING

MAIN

Ref. No.	Part No.	Description	Remark
*	A-4649-117-A	DISP BOARD, COMPLETE *****	
		< CAPACITOR >	
C401	1-126-154-11	ELECT 47uF	20% 5.3V
C402	1-161-494-00	CERAMIC 0.022uF	25V
C403	1-161-494-00	CERAMIC 0.022uF	25V
C404	1-161-494-00	CERAMIC 0.022uF	25V
C405	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
		< DIODE >	
D401	8-719-987-63	DIODE 1N4148M	
D407	8-719-987-63	DIODE 1N4148M	
D408	8-719-987-63	DIODE 1N4148M	
D409	8-719-987-63	DIODE 1N4148M	
D410	8-719-987-63	DIODE 1N4148M	
D411	8-719-987-63	DIODE 1N4148M	
D412	8-719-121-24	DIODE RD9.1ES-L	
		< FLUORESCENT INDICATOR >	
FLD401	1-519-681-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC401	8-759-061-40	IC uPD75216ACW-C73	
IC402	8-741-100-48	IC SBX1610-59	
		< RESISTOR >	
R401	1-249-435-11	CARBON 33K 5% 1/4W	
R402	1-249-435-11	CARBON 33K 5% 1/4W	
R403	1-249-435-11	CARBON 33K 5% 1/4W	
R404	1-249-435-11	CARBON 33K 5% 1/4W	
R405	1-249-435-11	CARBON 33K 5% 1/4W	
R406	1-249-425-11	CARBON 4.7K 5% 1/4W	
R407	1-249-425-11	CARBON 4.7K 5% 1/4W	
R408	1-249-439-11	CARBON 68K 5% 1/4W	
		< SWITCH >	
S401	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S402	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S403	1-554-303-21	SWITCH, TACTILE (III)	
S404	1-554-303-21	SWITCH, TACTILE (II)	
S405	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S406	1-554-303-21	SWITCH, TACTILE (FADER)	
S407	1-554-303-21	SWITCH, TACTILE (>)	
S408	1-554-303-21	SWITCH, TACTILE (II)	

Ref. No.	Part No.	Description	Remark
S409	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S410	1-554-303-21	SWITCH, TACTILE (TIME)	
S411	1-554-303-21	SWITCH, TACTILE (II)	
S412	1-554-303-21	SWITCH, TACTILE (▲ OPEN/CLOSE)	
S413	1-554-303-21	SWITCH, TACTILE (■)	
S414	1-554-303-21	SWITCH, TACTILE (II)	
S415	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S416	1-554-303-21	SWITCH, TACTILE (TIME SET)	
S417	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
S418	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S440	1-554-303-21	SWITCH, TACTILE (CHECK)	
S441	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S442	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
		< VIBRATOR >	
X401	1-577-358-21	VIBRATOR, CERAMIC	

*	1-632-202-11	LOADING BOARD *****	
		< CONNECTOR >	
* CN301	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
		< SWITCH >	
S271	1-572-086-11	SWITCH, LEAF (OUT SW)	
S272	1-572-086-11	SWITCH, LEAF (IN SW)	

*	A-4649-118-A	MAIN BOARD, COMPLETE *****	
	4-902-345-01	HEAT SINK	
	7-682-547-09	SCREW +B 3X6	
		< CAPACITOR >	
C205	1-126-163-11	ELECT 4.7uF	20% 50V
C206	1-126-059-11	ELECT 10uF	20% 50V
C207	1-126-059-11	ELECT 10uF	20% 50V
C208	1-124-997-11	ELECT 470uF	20% 10V
C209	1-124-997-11	ELECT 470uF	20% 10V
C210	1-126-024-11	ELECT 220uF	20% 16V
C211	1-124-997-11	ELECT 470uF	20% 10V
C212	1-164-159-11	CERAMIC 0.1uF	50V
C213	1-126-012-11	ELECT 470uF	20% 16V
C214	1-126-012-11	ELECT 470uF	20% 16V

MAIN

Ref.No.	Part No.	Description	Remark		
C301	1-126-022-11	ELECT	47uF	20%	16V
C302	1-126-301-11	ELECT	1uF	20%	50V
C305	1-126-022-11	ELECT	47uF	20%	16V
C306	1-164-159-11	CERAMIC	0.1uF		50V
C307	1-164-159-11	CERAMIC	0.1uF		50V
C308	1-164-159-11	CERAMIC	0.1uF		50V
C311	1-130-491-00	MYLAR	0.047uF	5%	50V
C312	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C313	1-161-494-00	CERAMIC	0.022uF		25V
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V
C315	1-126-300-11	ELECT	0.47uF	20%	50V
C317	1-164-159-11	CERAMIC	0.1uF		50V
C319	1-162-282-31	CERAMIC	100PF	10%	50V
C320	1-130-483-00	MYLAR	0.01uF	5%	50V
C321	1-162-208-31	CERAMIC	24PF	5%	50V
C322	1-126-022-11	ELECT	47uF	20%	16V
C324	1-164-159-11	CERAMIC	0.1uF		50V
C325	1-162-205-31	CERAMIC	18PF	5%	50V
C326	1-162-205-31	CERAMIC	18PF	5%	50V
C327	1-164-159-11	CERAMIC	0.1uF		50V
C328	1-126-024-11	ELECT	220uF	20%	16V
C329	1-126-024-11	ELECT	220uF	20%	16V
C330	1-162-294-31	CERAMIC	0.001uF	10%	50V
C331	1-164-159-11	CERAMIC	0.1uF		50V
C332	1-164-159-11	CERAMIC	0.1uF		50V
C333	1-164-159-11	CERAMIC	0.1uF		50V
C335	1-164-159-11	CERAMIC	0.1uF		50V
C351	1-126-022-11	ELECT	47uF	20%	16V
C352	1-164-159-11	CERAMIC	0.1uF		50V
C353	1-126-022-11	ELECT	47uF	20%	16V
C354	1-164-159-11	CERAMIC	0.1uF		50V
C355	1-126-022-11	ELECT	47uF	20%	16V
C356	1-164-159-11	CERAMIC	0.1uF		50V
C357	1-126-022-11	ELECT	47uF	20%	16V
C358	1-126-022-11	ELECT	47uF	20%	16V
C361	1-162-280-21	CERAMIC	82PF	10%	50V
C362	1-162-280-21	CERAMIC	82PF	10%	50V
C363	1-162-213-21	CERAMIC	39PF	10%	50V
C364	1-162-213-21	CERAMIC	39PF	10%	50V
C365	1-162-213-21	CERAMIC	39PF	10%	50V
C366	1-162-213-21	CERAMIC	39PF	10%	50V
C367	1-161-494-00	CERAMIC	0.022uF		25V
C368	1-161-494-00	CERAMIC	0.022uF		25V
C371	1-106-359-00	MYLAR	4700PF	5%	200V
C372	1-106-359-00	MYLAR	4700PF	5%	200V
C373	1-130-472-00	MYLAR	0.0012uF	5%	50V
C374	1-130-472-00	MYLAR	0.0012uF	5%	50V
C377	1-126-022-11	ELECT	47uF	20%	16V

Ref.No.	Part No.	Description	Remark		
C378	1-126-022-11	ELECT	47uF	20%	16V
C379	1-106-347-00	MYLAR	1500PF	5%	200V
C380	1-106-347-00	MYLAR	1500PF	5%	200V
< CONNECTOR >					
* CN204	1-564-511-11	PLUG, CONNECTOR 8P			
* CN301	1-568-843-11	SOCKET, CONNECTOR 28P			
* CN302	1-568-822-11	SOCKET, CONNECTOR 22P			
< DIODE >					
D207	8-719-114-49	DIODE RD7.5JSB2			
D208	8-719-109-89	DIODE RD5.6ESB2			
D209	8-719-987-63	DIODE 1N4148M			
D328	8-719-987-63	DIODE 1N4148M			
D344	8-719-987-63	DIODE 1N4148M			
< IC >					
IC202	8-759-630-21	IC M5290P-16			
IC301	8-752-337-26	IC CXD2500AQ			
IC302	8-752-342-65	IC CXD2560M			
IC303	8-752-349-01	IC CXD2561AM			
IC306	8-759-945-58	IC RC4558P			
IC307	8-759-945-58	IC RC4558P			
< JACK >					
J381	1-569-442-11	JACK, PIN 2P			
< COIL >					
L301	1-408-403-00	INDUCTOR 3.3uH			
L321	1-408-403-00	INDUCTOR 3.3uH			
< TRANSISTOR >					
Q202	8-729-140-96	TRANSISTOR 2SD774-34			
Q203	8-729-141-83	TRANSISTOR 2SB1094-LK			
Q204	8-729-900-65	TRANSISTOR DTA144ES			
Q205	8-729-900-89	TRANSISTOR DTC144ES			
Q206	8-729-900-89	TRANSISTOR DTC144ES			
Q207	8-729-230-45	TRANSISTOR 2SC2458-YGR			
Q208	8-729-141-83	TRANSISTOR 2SB1094-LK			
Q341	8-729-900-65	TRANSISTOR DTA144ES			
Q342	8-729-900-65	TRANSISTOR DTA144ES			
Q343	8-729-900-65	TRANSISTOR DTA144ES			
Q344	8-729-900-89	TRANSISTOR DTC144ES			
Q371	8-729-900-74	TRANSISTOR DTC143TS			
Q372	8-729-900-74	TRANSISTOR DTC143TS			
Q373	8-729-900-74	TRANSISTOR DTC143TS			
Q374	8-729-900-74	TRANSISTOR DTC143TS			
Q375	8-729-231-55	TRANSISTOR 2SC2878-AB			
Q376	8-729-231-55	TRANSISTOR 2SC2878-AB			

MAIN

POWER

Ref. No.	Part No.	Description	Remark
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< RESISTOR >

R204	1-249-425-11	CARBON	4.7K 5% 1/4W
R205	1-249-425-11	CARBON	4.7K 5% 1/4W
R206	1-249-417-11	CARBON	1K 5% 1/4W
R207	1-249-417-11	CARBON	1K 5% 1/4W
R208	1-249-423-11	CARBON	3.3K 5% 1/4W
R209	1-249-413-11	CARBON	470 5% 1/4W
R214	1-249-417-11	CARBON	1K 5% 1/4W
R301	1-249-417-11	CARBON	1K 5% 1/4W
R302	1-249-417-11	CARBON	1K 5% 1/4W
R303	1-249-421-11	CARBON	2.2K 5% 1/4W
R304	1-249-417-11	CARBON	1K 5% 1/4W
R306	1-249-413-11	CARBON	470 5% 1/4W
R309	1-249-405-11	CARBON	100 5% 1/4W
R311	1-249-423-11	CARBON	3.3K 5% 1/4W
R312	1-249-429-11	CARBON	10K 5% 1/4W
R313	1-249-423-11	CARBON	3.3K 5% 1/4W
R314	1-249-429-11	CARBON	10K 5% 1/4W
R315	1-249-417-11	CARBON	1K 5% 1/4W
R316	1-249-417-11	CARBON	1K 5% 1/4W
R317	1-249-419-11	CARBON	1.5K 5% 1/4W
R318	1-249-441-11	CARBON	100K 5% 1/4W
R319	1-247-903-00	CARBON	1M 5% 1/4W
R320	1-249-417-11	CARBON	1K 5% 1/4W
R321	1-249-417-11	CARBON	1K 5% 1/4W
R322	1-249-417-11	CARBON	1K 5% 1/4W
R323	1-249-417-11	CARBON	1K 5% 1/4W
R324	1-249-417-11	CARBON	1K 5% 1/4W
R325	1-249-417-11	CARBON	1K 5% 1/4W
R326	1-249-417-11	CARBON	1K 5% 1/4W
R327	1-247-903-00	CARBON	1M 5% 1/4W
R328	1-247-895-00	CARBON	470K 5% 1/4W
R343	1-249-441-11	CARBON	100K 5% 1/4W
R344	1-249-441-11	CARBON	100K 5% 1/4W
R345	1-249-425-11	CARBON	4.7K 5% 1/4W
R346	1-249-425-11	CARBON	4.7K 5% 1/4W
R347	1-249-441-11	CARBON	100K 5% 1/4W
R351	1-249-436-11	CARBON	39K 5% 1/4W
R352	1-249-436-11	CARBON	39K 5% 1/4W
R353	1-249-436-11	CARBON	39K 5% 1/4W
R354	1-249-436-11	CARBON	39K 5% 1/4W
R355	1-249-436-11	CARBON	39K 5% 1/4W
R356	1-249-436-11	CARBON	39K 5% 1/4W
R357	1-249-436-11	CARBON	39K 5% 1/4W
R358	1-249-436-11	CARBON	39K 5% 1/4W
R361	1-249-432-11	CARBON	18K 5% 1/4W

Ref. No.	Part No.	Description	Remark
----------	----------	-------------	--------

R362	1-249-432-11	CARBON	18K 5% 1/4W
R363	1-249-432-11	CARBON	18K 5% 1/4W
R364	1-249-432-11	CARBON	18K 5% 1/4W
R365	1-247-438-11	CARBON	56K 5% 1/4W
R366	1-247-438-11	CARBON	56K 5% 1/4W
R367	1-247-438-11	CARBON	56K 5% 1/4W
R368	1-247-438-11	CARBON	56K 5% 1/4W
R369	1-249-419-11	CARBON	1.5K 5% 1/4W
R370	1-249-419-11	CARBON	1.5K 5% 1/4W
R371	1-249-419-11	CARBON	1.5K 5% 1/4W
R372	1-249-419-11	CARBON	1.5K 5% 1/4W
R373	1-247-887-00	CARBON	220K 5% 1/4W
R374	1-247-887-00	CARBON	220K 5% 1/4W
R375	1-249-409-11	CARBON	220 5% 1/4W
R376	1-249-409-11	CARBON	220 5% 1/4W
R377	1-249-409-11	CARBON	220 5% 1/4W
R378	1-249-409-11	CARBON	220 5% 1/4W
R383	1-249-413-11	CARBON	470 5% 1/4W
R384	1-249-413-11	CARBON	470 5% 1/4W
R385	1-249-393-11	CARBON	10 5% 1/4W
R386	1-249-393-11	CARBON	10 5% 1/4W
R396	1-247-848-11	CARBON	5.1K 5% 1/4W
R397	1-247-848-11	CARBON	5.1K 5% 1/4W
R398	1-247-848-11	CARBON	5.1K 5% 1/4W
R399	1-247-848-11	CARBON	5.1K 5% 1/4W

< VIBRATOR >

X327	1-579-314-11	VIBRATOR, CRYSTAL
------	--------------	-------------------

*	1-642-024-21	POWER BOARD
---	--------------	-------------

< CAPACITOR >

C201	1-124-572-11	ELECT	100uF	20%	63V
C202	1-126-059-11	ELECT	10uF	20%	50V
C203	1-124-556-11	ELECT	2200uF	20%	16V
C204	1-126-937-11	ELECT	4700uF	20%	16V
C221	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

- CN201 1-564-511-11 PLUG, CONNECTOR 8P
- CN203 1-580-230-11 PIN, CONNECTOR (PC BOARD) 3P

< DIODE >

D201	8-719-200-82	DIODE	11ES2
D202	8-719-110-03	DIODE	RD7.5ES-B2
D203	8-719-200-82	DIODE	11ES2

POWER

P.SW

Ref. No.	Part No.	Description	Remark
D204	8-719-200-82	DIODE 11ES2	
D205	8-719-200-82	DIODE 11ES2	
D206	8-719-200-82	DIODE 11ES2	
< IC >			
IC201	8-759-633-42	IC M5293L	
< TRANSISTOR >			
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	

*	1-642-028-21	P.SW BOARD	

< SWITCH >			
△S201	1-571-722-11	SWITCH, VOLTAGE SELECTION (E, Saudi Arabia)	
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

MISCELLANEOUS			

△12	1-574-127-31	CORD, POWER (MADE IN FRANCE) (AEP)	
△12	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
△12	1-574-390-31	CORD, POWER (UK)	
△12	1-575-651-21	CORD, POWER (MADE IN JAPAN) (AEP, IT, Saudi Arabia)	
△12	1-575-653-21	CORD, POWER (E)	
△12	1-590-836-11	CORD, POWER (US)	
20	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
22	1-569-007-11	ADAPTOR, CONVERSION (E)	
23	1-569-008-11	ADAPTOR, CONVERSION (Saudi Arabia)	
* 311	1-452-538-11	MAGNET	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
△357	8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M191	A-4604-363-A	MOTOR (L) ASSY	
△T901	1-449-921-11	TRANSFORMER, POWER (US)	
△T901	1-449-922-11	TRANSFORMER, POWER (AEP, UK, IT, AUS)	
△T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia)	

Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			

	1-558-271-11	CORD, CONNECTION (MADE IN FRANCE)	
	1-559-533-11	CORD, CONNECTION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
	3-754-846-11	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese)	
*	4-922-998-01	CUSHION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
*	4-941-548-01	LABEL, CLASS 1 (AEP, UK, IT, AUS)	
*	4-948-882-01	INDIVIDUAL CARTON	
*	4-949-399-01	CUSHION (MADE IN FRANCE) (AEP, UK)	

HARDWARE LIST

#1	7-682-548-09	SCREW +BVT 3X8 (S)
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#3	7-682-547-09	SCREW +B 3X6
#4	7-682-547-04	SCREW +BVT 3X6 (S)
#5	7-621-775-10	SCREW +B 2.6X4
#6	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#7	7-621-255-15	SCREW +P 2X3

AUS : Australian

IT : Italian

The components identified by
mark △ or dotted line with mark.
△ are critical for safety.
Replace only with part number
specified.

PARTS LIST

* Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

ACCESSORY & PACKING MATERIAL

<u>Part No.</u>	<u>Description</u>
1-465-962-11	REMOTE COMMANDER (Include ※ 1) (RM-S171) (A10)
1-501-374-11	ANTENNA, LOOP
※1. 4-941-762-01	COVER BATTERY (RM-S171)
1-465-963-11	REMOTE COMMANDER (Include ※ 2) (RM-S271) (A20)
※2. 3-707-584-01	COVER BATTERY (RM-S271)
3-754-598-51	MANUAL, INSTRUCTION (ENGLISH, F, E, RC) (E, EA, AUS Model) (A10)
3-754-669-61	MANUAL, INSTRUCTION (ENGLISH, F, E, RC) (E, EA, AUS Model) (A20)

F : FRENCH

E : SPANISH

RC : CHINESE

*4-950-792-01 INDIVIDUAL CARTON (A10)

*4-951-320-01 INDIVIDUAL CARTON (A20:E2)

*4-951-321-01 INDIVIDUAL CARTON (A20:E3)

*4-951-322-01 INDIVIDUAL CARTON (A20:AUS)

EA : Saudi Arabia model

AUS : Australian model

HST-A10

SERVICE MANUAL

*E Model
Australian Model*



- HST-A10 is the STEREO DECK RECEIVER in LBT-A10

SPECIFICATIONS

Tuner

System FM stereo
FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 to 108 MHz
Antenna 75 ohms unbalanced
300 ohms balanced

Intermediate frequency 10.7 MHz

AM tuning section (for Medeastern model)

Tuning range SW: 5.95 to 17.90 MHz
MW: 531 to 1,602 kHz

AM tuning section (model for other countries)

Tuning range 531 to 1,602 kHz (at 9 kHz step)
530 to 1,710 kHz (at 10 kHz step)

Antenna AM loop antenna
External antenna terminal

Intermediate frequency 450 kHz

Amplifier

Peak music power output 400 W (6 ohms, 4 speakers driven)

Continuous RMS power output 28 W + 28 W (6 ohms, at 1 kHz, 5% THD)

Input	Jack type	Sensitivity	Impedance
CD IN	Phono	300 mV	47 kohms
VIDEO IN	Phono	300 mV	47 kohms
PHONO IN	Phono	3 mV	47 kohms
MIC	Phone	1 mV	10 kohms

Model Name Using Similar Mechanism	HST-D105
Tape Transport Mechanism Type	TCM-180VW-H7

Output	Jack type	Impedance
SURROUND SPEAKER	Phono	Accepts speakers of 8 – 16 ohms
HEADPHONES	Stereo phone	Accepts headphones of 8 ohms or more

Frequency response CD: 15 Hz to 50 kHz ± 0 dB -3 dB

Cassette deck

Recording system 4-track 2-channel stereo
Frequency response With Type II cassette (Sony UX-S)
40 Hz to 14 kHz (± 3 dB)
With Type I cassette (Sony HF-S)
40 Hz to 13 kHz (± 3 dB)

Wow and flutter 0.1% (WRMS)


General

Power requirements 110 – 120 V/220 – 240 V AC, adjustable with the VOLTAGE SELECTOR, 50/60 Hz

Power consumption 75 W

Weight Approx. 6.9 kg

Dimensions Approx. 355 × 290 × 325 mm (w/h/d, including projections)



Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
“DOLBY” and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

COMPACT Hi-Fi STEREO SYSTEM
SONY®

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
SECTION 1.	GENERAL	3
SECTION 2.	ADJUSTMENTS	4
SECTION 3.	DIAGRAMS	
3-1.	Circuit Boards Location	7
3-2.	Semiconductor Lead Layouts	8
3-3.	Printed Wiring Boards — Audio Section —	10
3-4.	Schematic Diagrams — Audio Section —	15
	IC Block Diagrams	17
3-5.	Schematic Diagrams — Panel Section —	18
	IC Block Diagrams	20
3-6.	Schematic Diagrams — Tuner Section —	21
3-7.	Schematic Diagrams — TC Section —	24
	IC Block Diagrams	26
3-8.	Printed Wiring Boards — TC Section —	27
SECTION 4.	EXPLODED VIEWS	
4-1.	Cabinet Section	29
4-2.	Front Panel Section	30
4-3.	Mechanism Deck Section-1	31
4-4.	Mechanism Deck Section-2	32
4-5.	Mechanism Deck Section-3	33
SECTION 5.	ELECTRICAL PARTS LIST	34

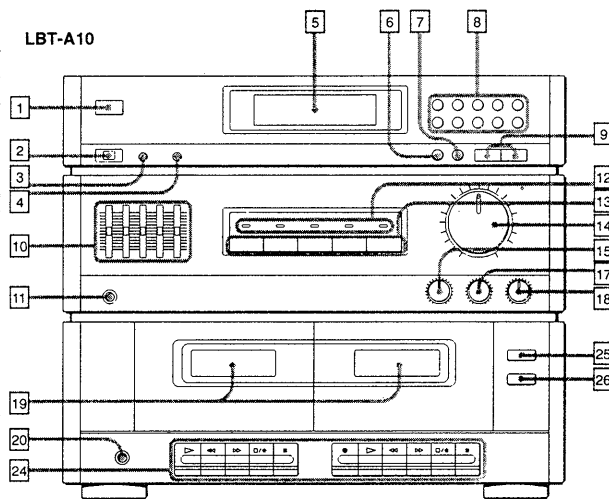
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

This section is extracted from instruction manual.

Location of Controls

Refer to the pages indicated in () for details.



Tuner

- 1 POWER switch (12)
- 2 Remote sensor
- 3 MEMORY button (20)
- 4 ST/MUTE button (18)
- 5 Display window
- 6 SHIFT button (20)
- 7 BAND SELECT button (18)
- 8 Buttons for storing station frequencies (20)
- 9 DUAL MODE TUNING buttons (18, 20, 22)

Amplifier

- 10 GRAPHIC EQUALIZER controls (14)
- 11 HEADPHONES jack
- 12 Function indicators
- 13 Function selectors (VIDEO/TAPE/CD/TUNER/PHONO)
- 14 VOLUME control (14)
- 15 SURROUND control (14)
- 16 DBFB (dynamic bass feedback) control (14)
- 17 BALANCE control (14)

Cassette Deck

- 19 Cassette holders
- 20 MIC jack (32)*
- 21 Tape operation buttons (24)
 - ◀◀ Leftward fast winding
 - ▶▶ Rightward fast winding
 - ▶ Forward play
 - ▲ Stop/eject
 - || PAUSE/Pause
 - REC/Record
- 28 TAPE SELECT button (24, 26, 30)
- 29 DUBBING SPEED button (30)

SECTION 2 ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS

- Clean the following parts with a denatured alcohol-moistened swab:

record/playback heads	pinch rollers
erase heads	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30--70g·cm (0.42--0.97oz·inch)
FWD Back tension	CQ-102C	1.5--5.5g·cm (0.020--0.076oz·inch)
FF. REW	CQ-201B	63g·cm or more (0.87oz·inch)

2-2. ELECTRICAL ADJUSTMENTS

0dB = 0.775V (AF)
0dB = 0.1μV (RF)

CASSETTE DECK SECTION

- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
- The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF

TAPE SELECT switch: TYPE I

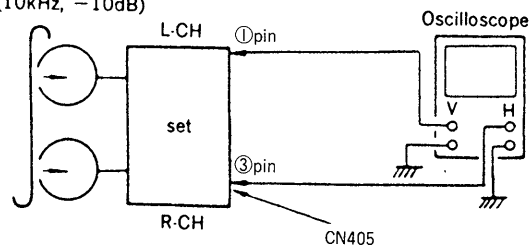
Type	Signal	Used for
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

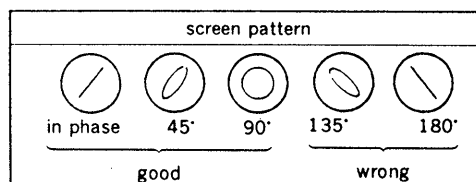
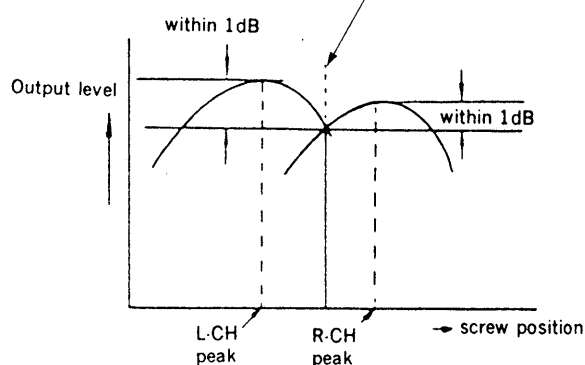
Note: Perform this adjustments for both decks.

Procedure:

- Mode: FWD playback
test tape
P-4-A100
(10kHz, -10dB)

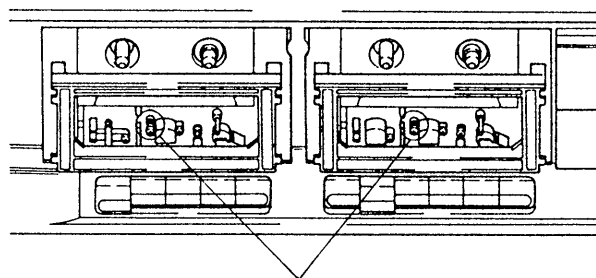


- Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



- After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location:

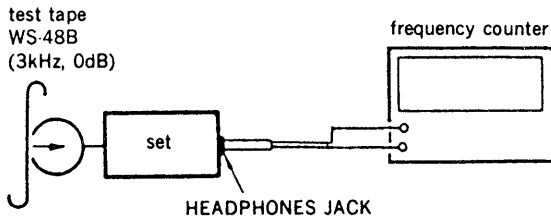


Adjustment screw
REC/PB head (deck B)
or PB head (deck A)

Tape Speed Adjustment

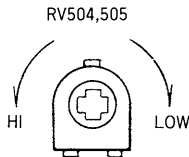
Procedure :

Mode : playback



- High speed adjustment
 1. Short pin CN407. Then at HIGH speed mode.
 2. Adjust RV504 so that the frequency counter reads 6000 ± 20 Hz.
(Must be first Adjustment B deck)
- NORMAL speed adjustment
 1. Remove the short pin from CN407. Then at NORMAL speed mode.
 2. Adjust RV505 so that the frequency counter reads 3000 ± 10 Hz.

Adjustment Location: TC MAIN board

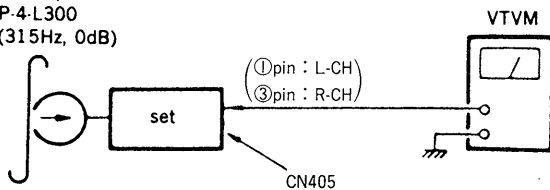


Playback Level Adjustment

Procedure :

Mode : FWD playback

test tape
P-4-L300
(315Hz, 0dB)



DECK-A side RV400(L-CH), RV500(R-CH)
DECK-B side RV401(L-CH), RV501(R-CH)
so that the limits below are satisfied.

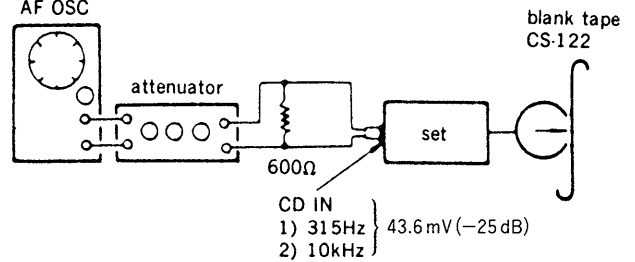
Adjustable limits :

CN405 level: $461.6 - 411.4$ mV ($-4.5 - -5.5$ dB)
level difference between the channels : within 1.0dB
(See page 6 for Adjustment Location)

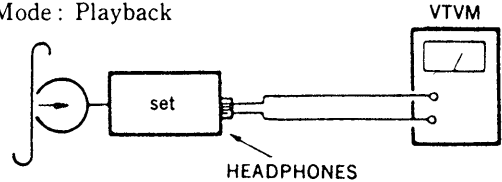
Record BIAS Current Adjustment

Procedure :

1. Mode : record



2. Mode : Playback



- (1) Supply a 43.6mV (-25 dB) signal (315 Hz) from the CD IN. Adjust the VOLUME control so that a 24.5mV (-30 dB) signal is output to the headphones terminal.
- (2) Insert alignment tape CS-122 into deck B and put the set into the REC mode.
- (3) Adjust the signal frequency to 10kHz.
- (4) Put the set into the PB mode and adjust RV403(L CH) and RV503(R CH) in the REC mode so that the level difference between 315Hz and 10kHz is within 0 ± 0.5 dB.
- (5) Repeatedly put the set into the REC and PB modes two to four times and adjust the bias.

Adjustable limits :

The HEADPHONES level of 10kHz signal relative to that of 315Hz: $0\text{dB} \pm 0.5\text{dB}$

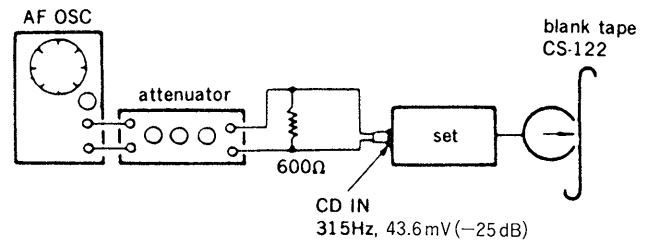
Record Level Adjustment

Setting :

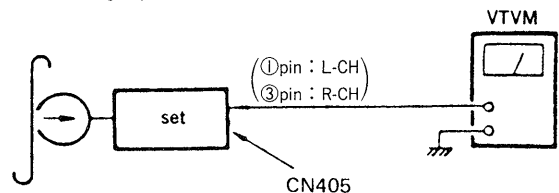
TAPE SELECT : TYPE I

Procedure :

1. Mode : record



2. Mode : playback



- (1) Supply a 43.6mV (−25dB) signal (315Hz) from the CD terminal.
- (2) Insert alignment tape CS-122 into deck B and record the signal. Then playback the recorded portion of the tape and adjust RV402(L-CH) and RV502(R-CH) so that the 43.6mV (−25dB) signal output is obtained at CN405 terminal.

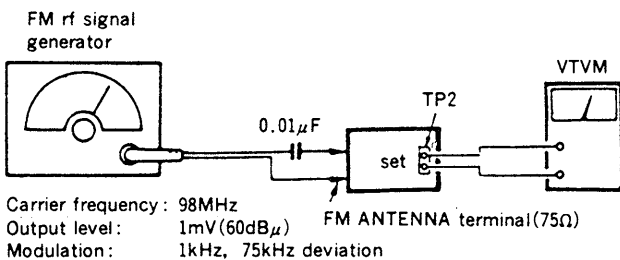
Adjustable limits :

CN405 level : 46.2 — 41.1mV (−24.5 — −25.5dB)

TUNER SECTION

As FM FRONT-END FE301 is difficult to repair if faulty, replace it with new one.

FM NULL Adjustment

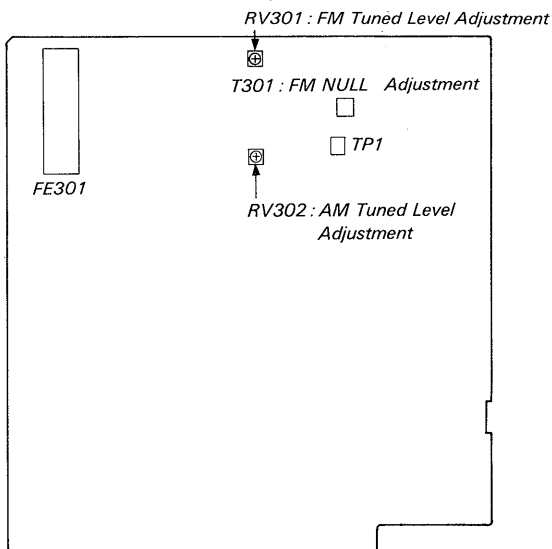


Procedure :

1. Tune the set to 98 MHz.
2. Adjust T301 for 0V reading on the VTVM.

Adjustment Location :

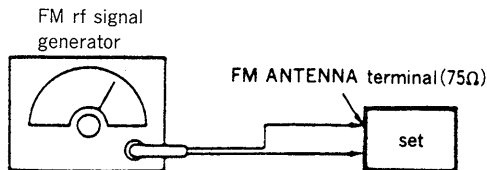
MAIN BOARD (Component side)



FM Tuned Level Adjustment

Setting:

STEREO/MUTE : OFF

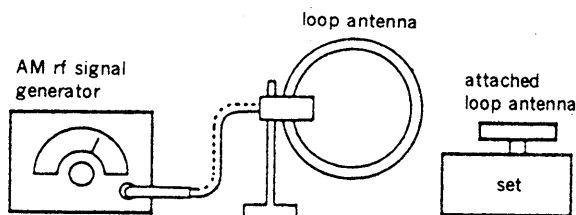


Carrier frequency: 98MHz
Output level: 0.018mV(25dBμ)
Modulation: 1kHz, 75kHz deviation

Procedure :

1. Tune the set to 98 MHz.
2. Adjust RV302 to the point where "TUNED" sign on FL601 just turns light.

• AM SECTION



Carrier frequency: 999kHz
Modulation: 400Hz, 30% modulation

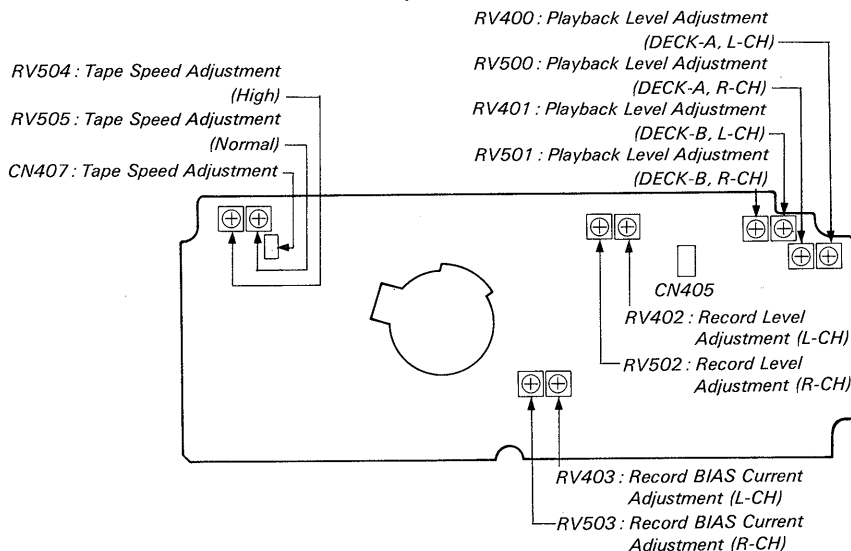
AM Tuned Level Adjustment

• AM BAND

1. Set loop antenna input level to 2.5mV (50 dBμ/m) and no signal tuned light should not on.
2. Tune the set to 999kHz.
3. Adjust RV301 to the point where "TUNED" sign on FL601 just turns light.

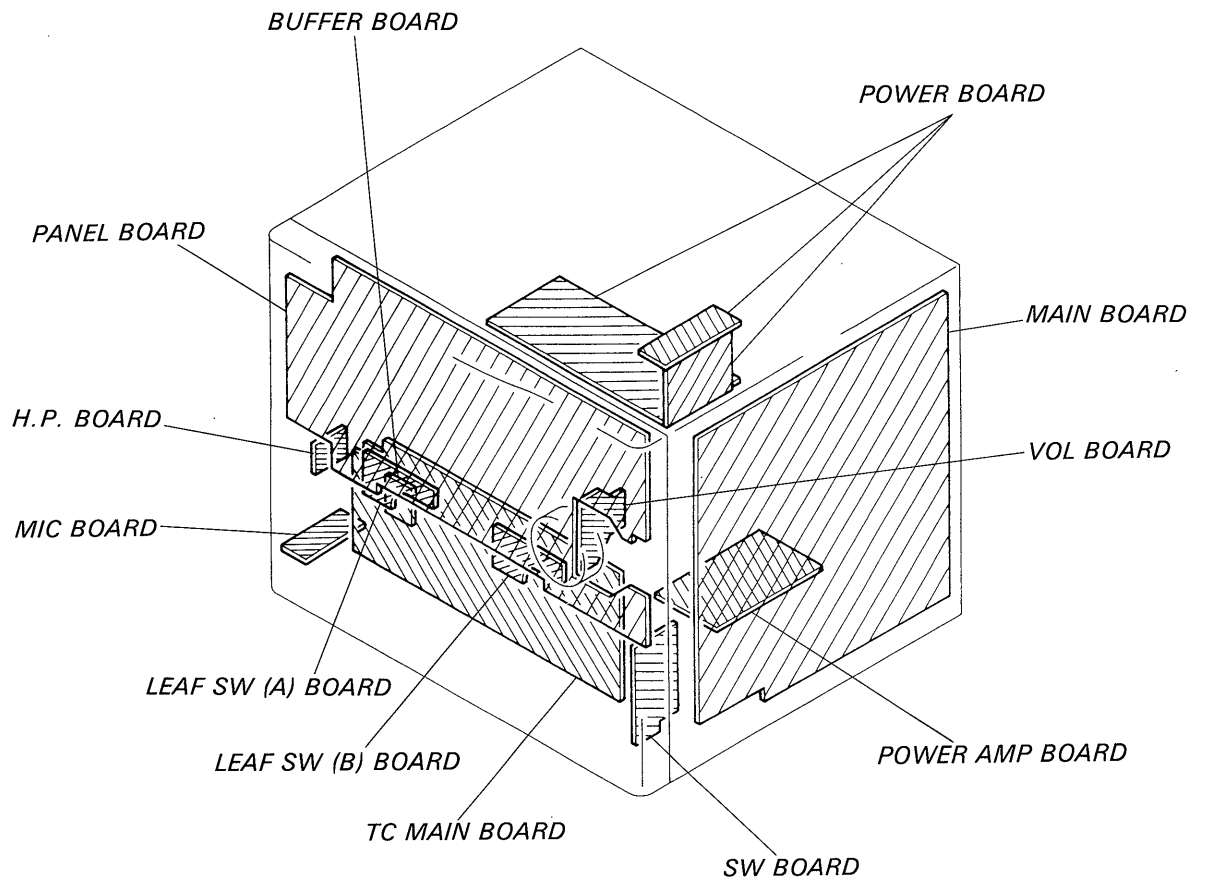
Adjustment Location :

TC MAIN BOARD (Component side)



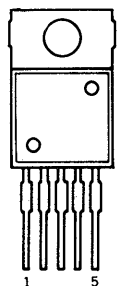
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

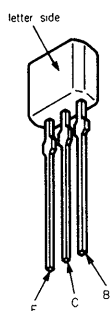


3-2. SEMICONDUCTOR LEAD LAYOUTS.

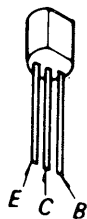
L78MR06



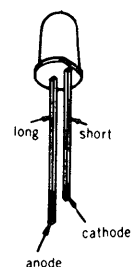
**2SA1175-HFE
2SC2785-HFE**



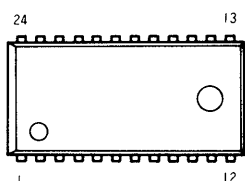
**2SC3112-B
2SC945-P**



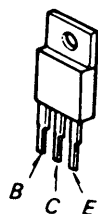
SEL1210S



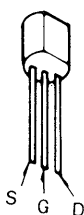
LC7218



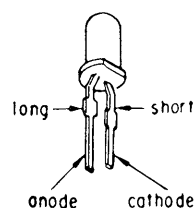
**2SB1094-LK
2SC1815-Y
2SD2012**



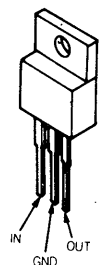
2SK246-GR3



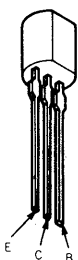
SEL2210S-D



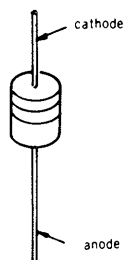
**M5F7807L
M5F7907L
TA7812S**



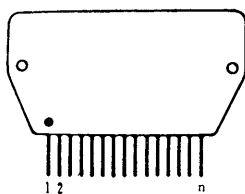
2SC1841-PAFAEA



**11ES2
1N4148M
UZ-3.9BSB
UZL-12M3
UZL-33L
UZP-5.6B**

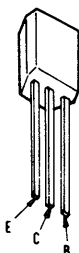


STK4122MK2

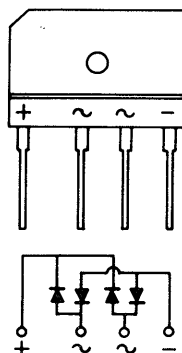


(Making side View)

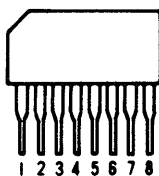
**2SC2669-OY
2SC3622A-LK
DTA114ES
DTA124ES
DTA144ES
DTC114ES
DTC124ES
DTC144ES**



PBA-402



μPC1237HA



3-3. PRINTED WIRING BOARDS—AUDIO Section—

- See page 8 for semiconductor lead layouts.
- See page 7 for circuit boards location.

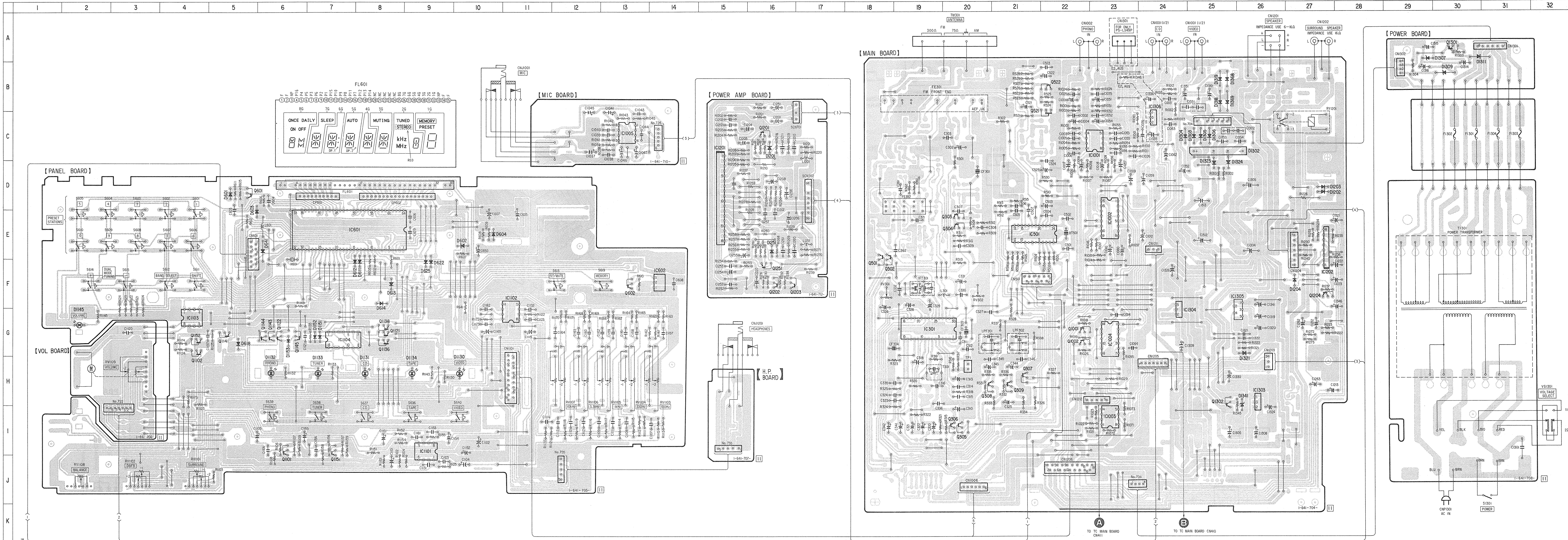
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D601	D-5	IC1003	I-23
D602	E-10	IC1004	G-23
D603	D-5	IC1005	C-13
D604	E-10	IC1101	I-9
D611	F-8	IC1102	F-11
D612	F-8	IC1103	G-4
D613	F-8	IC1104	G-7
D614	F-8	IC1201	C-15
D618	G-5	IC1202	F-27
D622	F-9	IC1303	H-26
D625	F-9	IC1304	G-24
D641	E-9	IC1305	F-26
D1130	H-10	IC1306	B-24
D1131	H-8		
D1132	H-6	Q303	D-20
D1133	H-7	Q304	E-20
D1134	H-9	Q305	I-20
D1145	G-2	Q306	I-20
D1151	G-7	Q307	H-21
D1152	G-7	Q308	H-20
D1153	G-6	Q309	H-21
D1201	C-16	Q501	F-18
D1202	D-27	Q502	F-18
D1203	D-27	Q521	B-21
D1204	F-27	Q522	B-22
D1251	E-16	Q601	D-5
D1302	C-26	Q602	F-13
D1303	C-25	Q1001	I-6
D1304	C-24	Q1002	G-22
D1305	C-25	Q1101	I-6
D1306	C-25	Q1102	H-4
D1307	A-30	Q1121	G-8
D1309	B-30	Q1122	G-6
D1311	A-30	Q1136	G-8
D1318	B-25	Q1138	G-8
D1319	B-25	Q1141	G-5
D1321	H-26	Q1143	G-6
D1323	D-25	Q1144	G-6
D1324	D-25	Q1145	G-6
D1341	H-26	Q1151	I-7
D1368	B-25	Q1152	G-4
D1369	B-25	Q1201	C-16
		Q1202	F-16
IC301	G-19	Q1203	F-16
IC501	E-21	Q1204	F-27
IC601	E-8	Q1251	F-16
IC602	F-14	Q1301	A-30
IC1001	C-23	Q1302	H-25
IC1002	E-23		

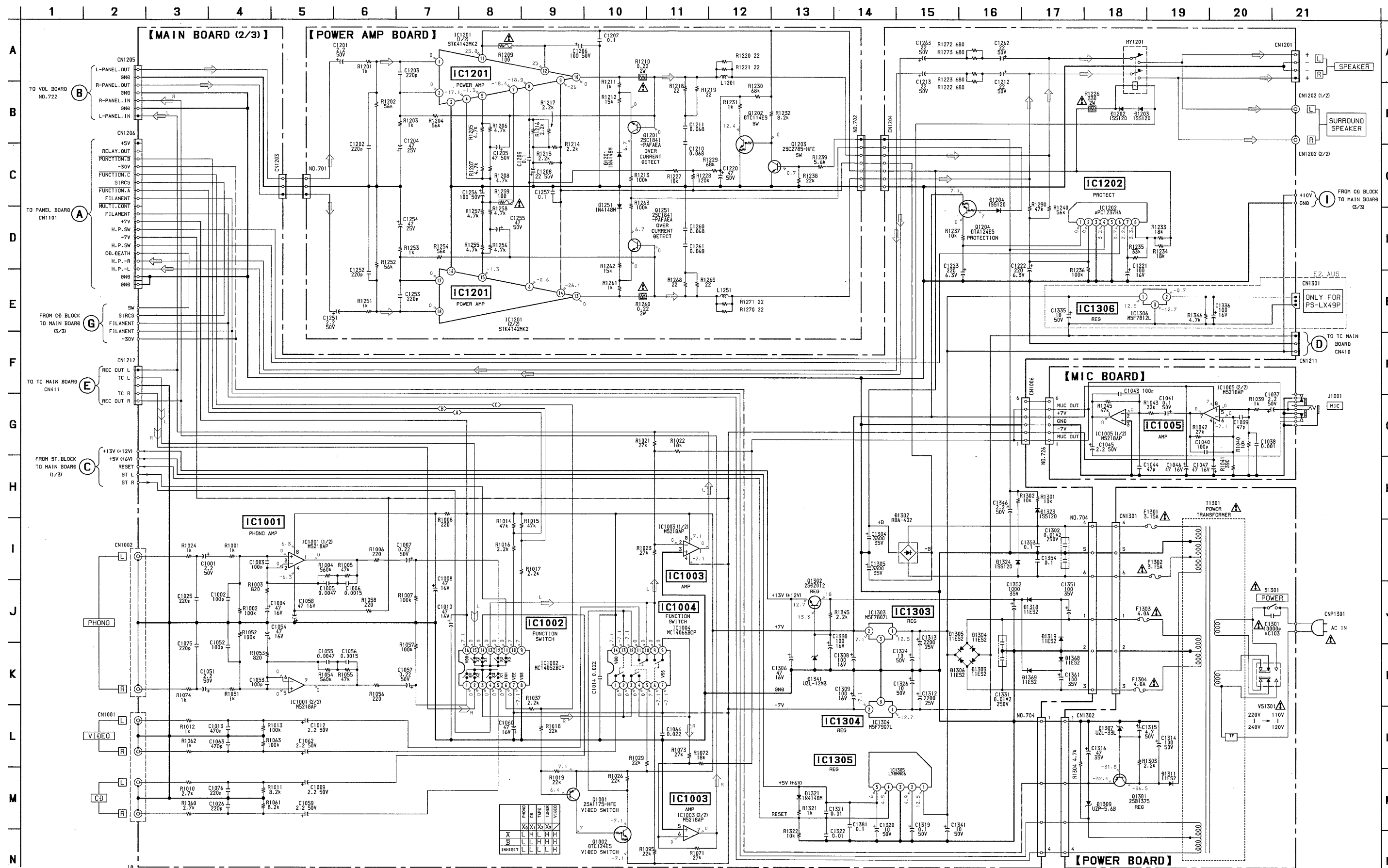
Note:

- — : parts extracted from the component side.
- : Pattern on the side which is seen.

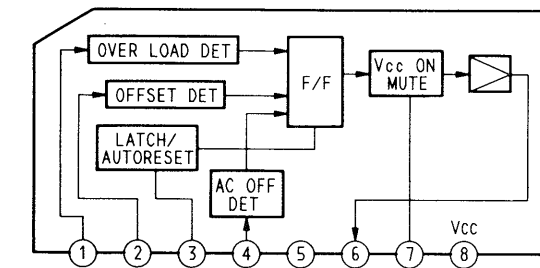
AUS: Australian
MY: Malaysian



3-4. SCHEMATIC DIAGRAMS—AUDIO Section—



● IC Block Diagrams

IC1202 μ PC1237HA

Note:

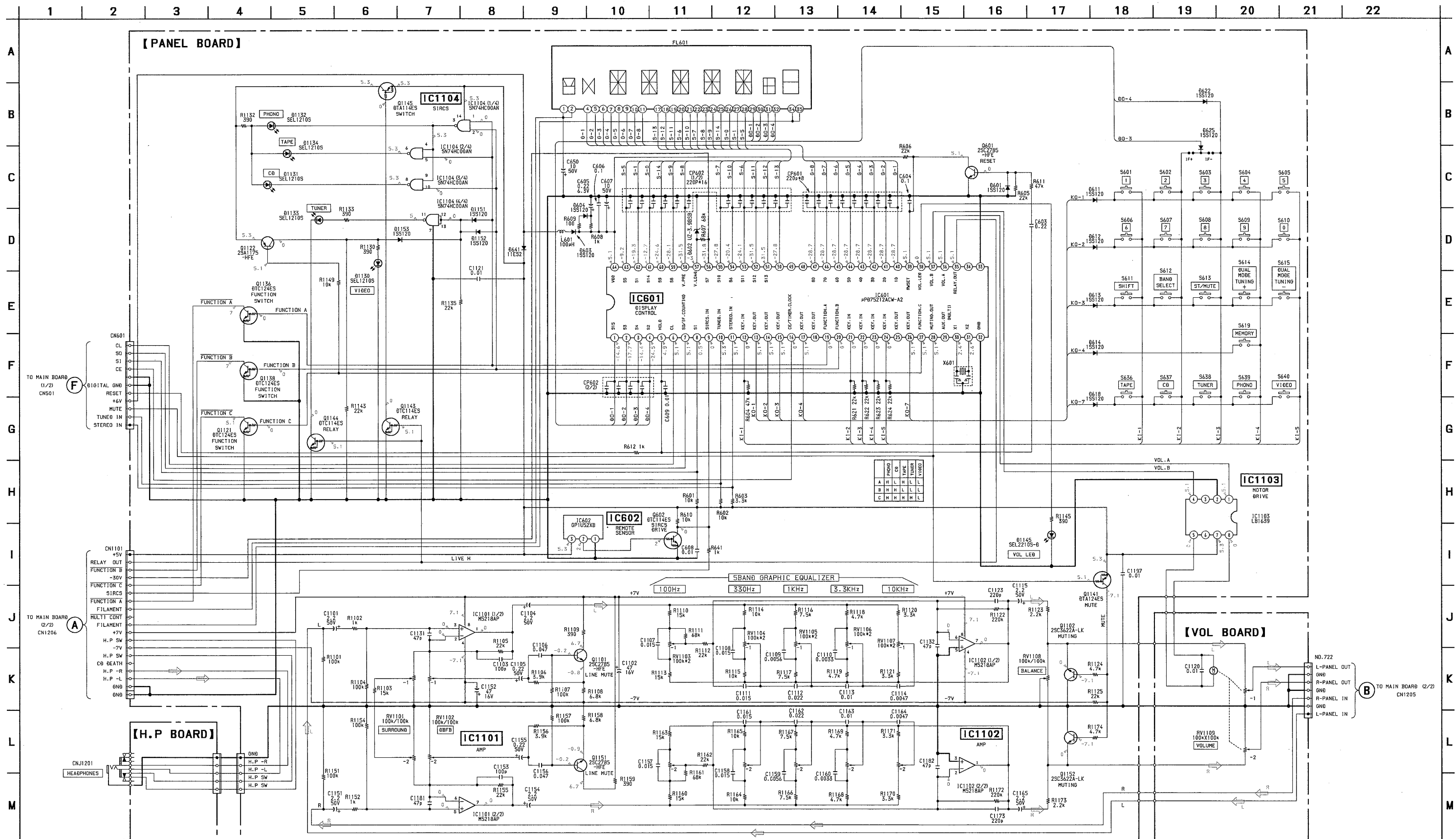
- All capacitors are in μ F unless otherwise noted. pF: μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.
- \square : nonflammable resistor.
- \square : fusible resistor.
- \square : printed resistor.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- : B+ Line
- : B- Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input Impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : FM Σ : PB (DECK A)

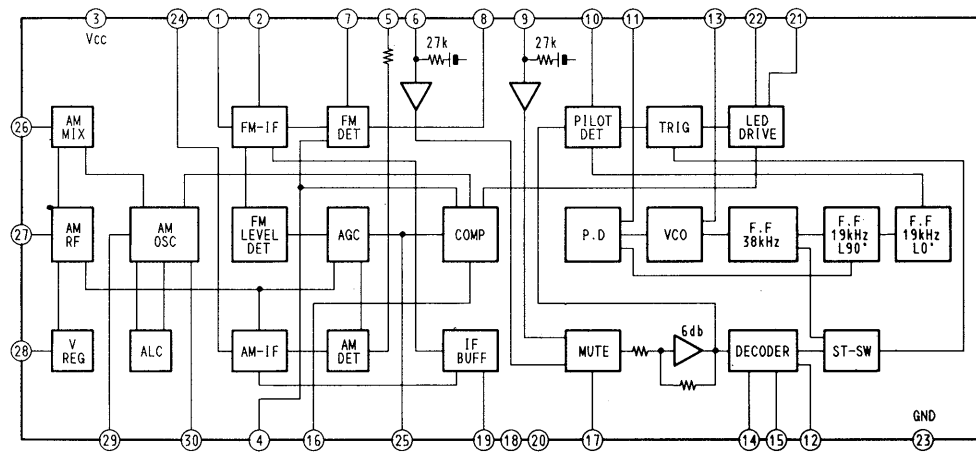
AUS: Australian
MY: Malaysian

3-5. SCHEMATIC DIAGRAMS—PANEL Section—
• See page 17 for note.

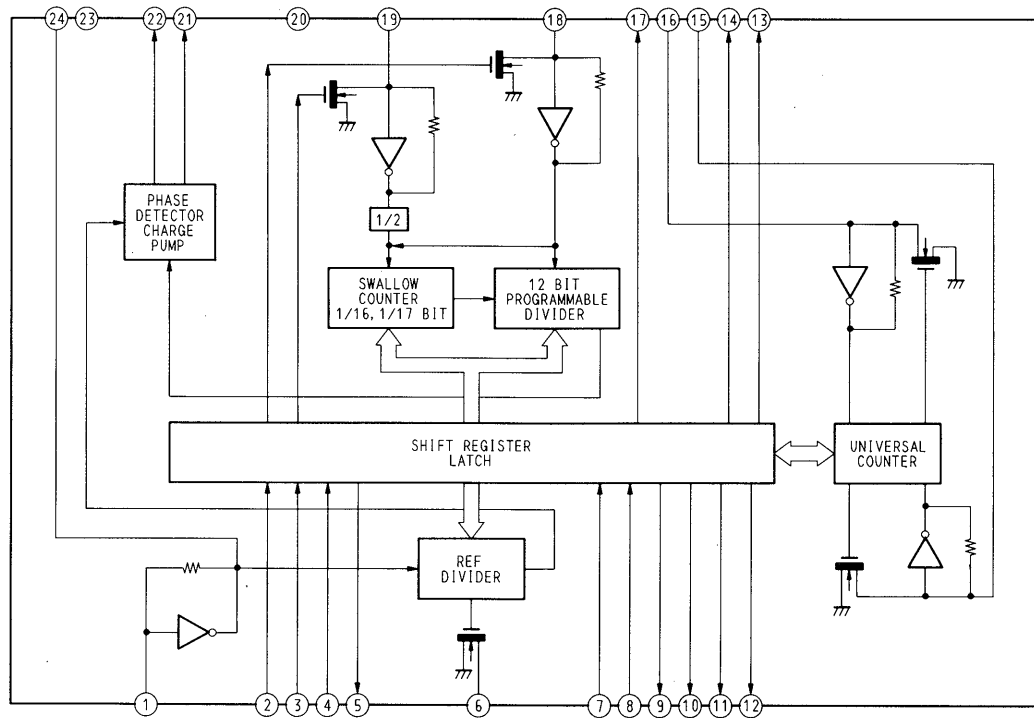


● IC Block Diagrams

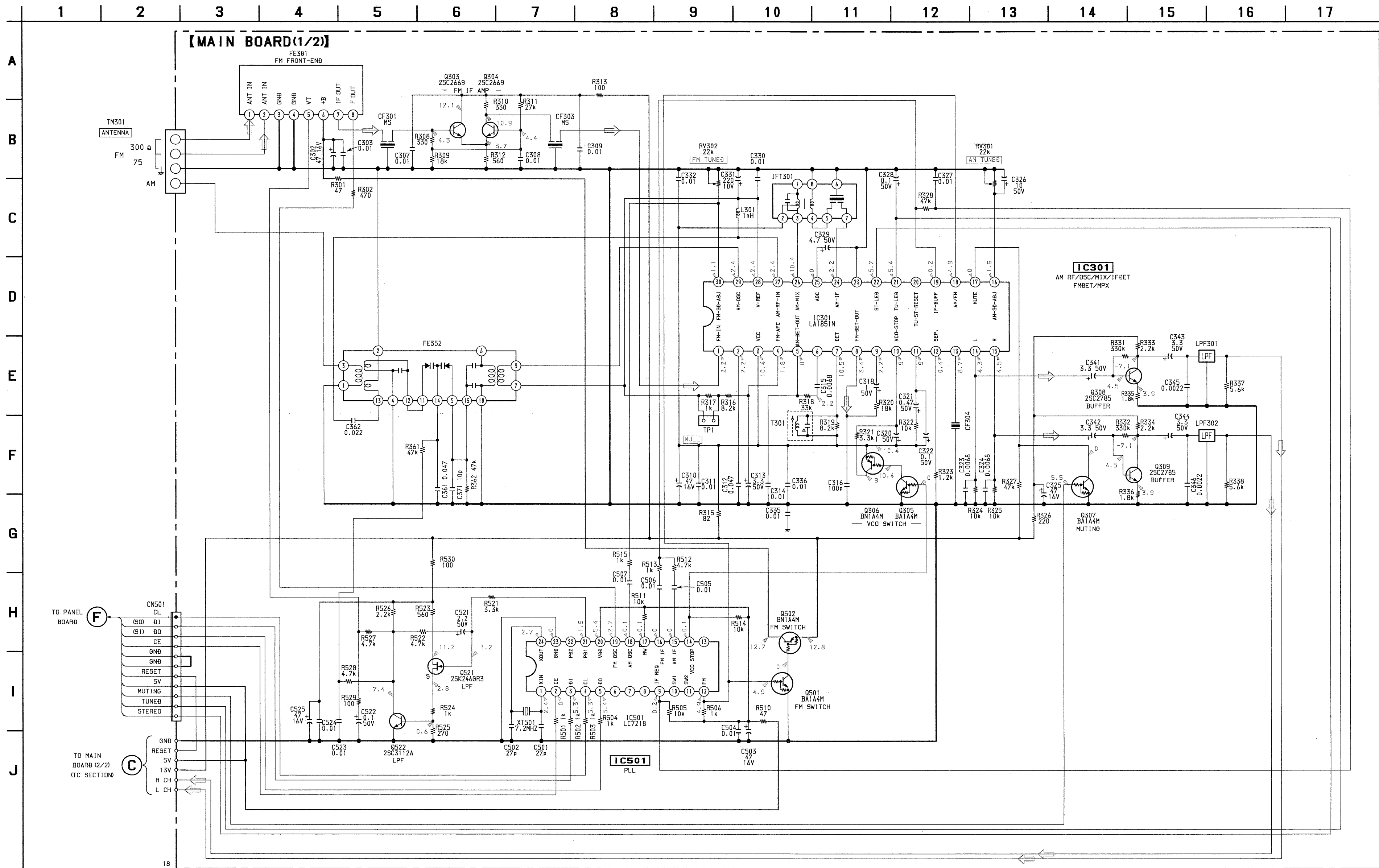
IC301 LA1851N

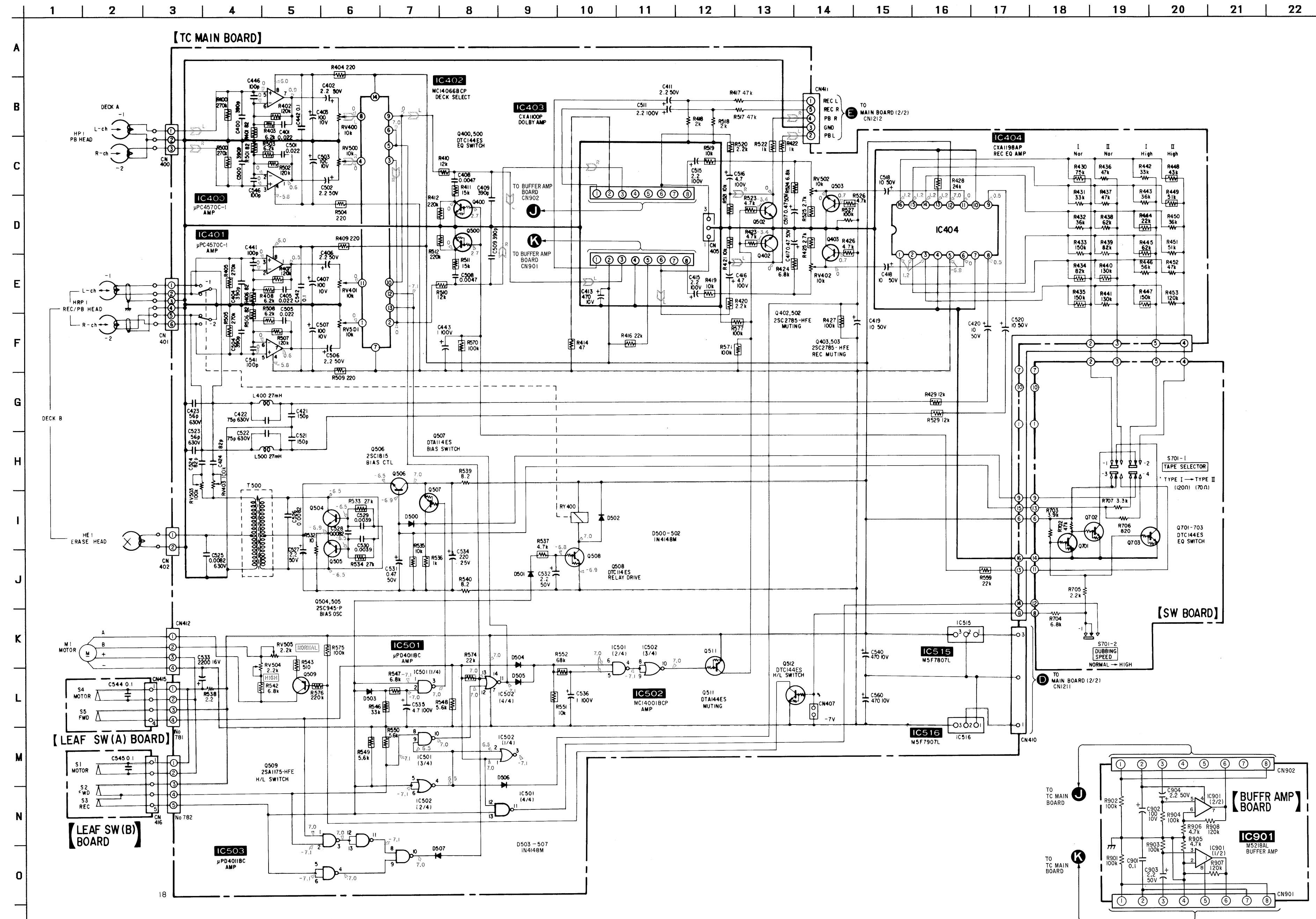


IC501 LC7218



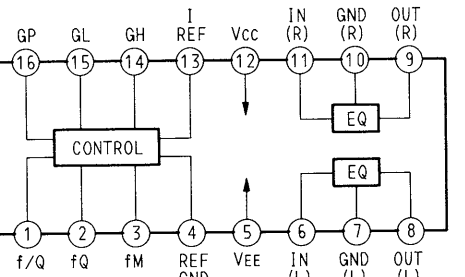
3-6. SCHEMATIC DIAGRAMS—TUNER Section—
• See page 17 for note.





• IC Block Diagrams

IC404 CXA1198AP

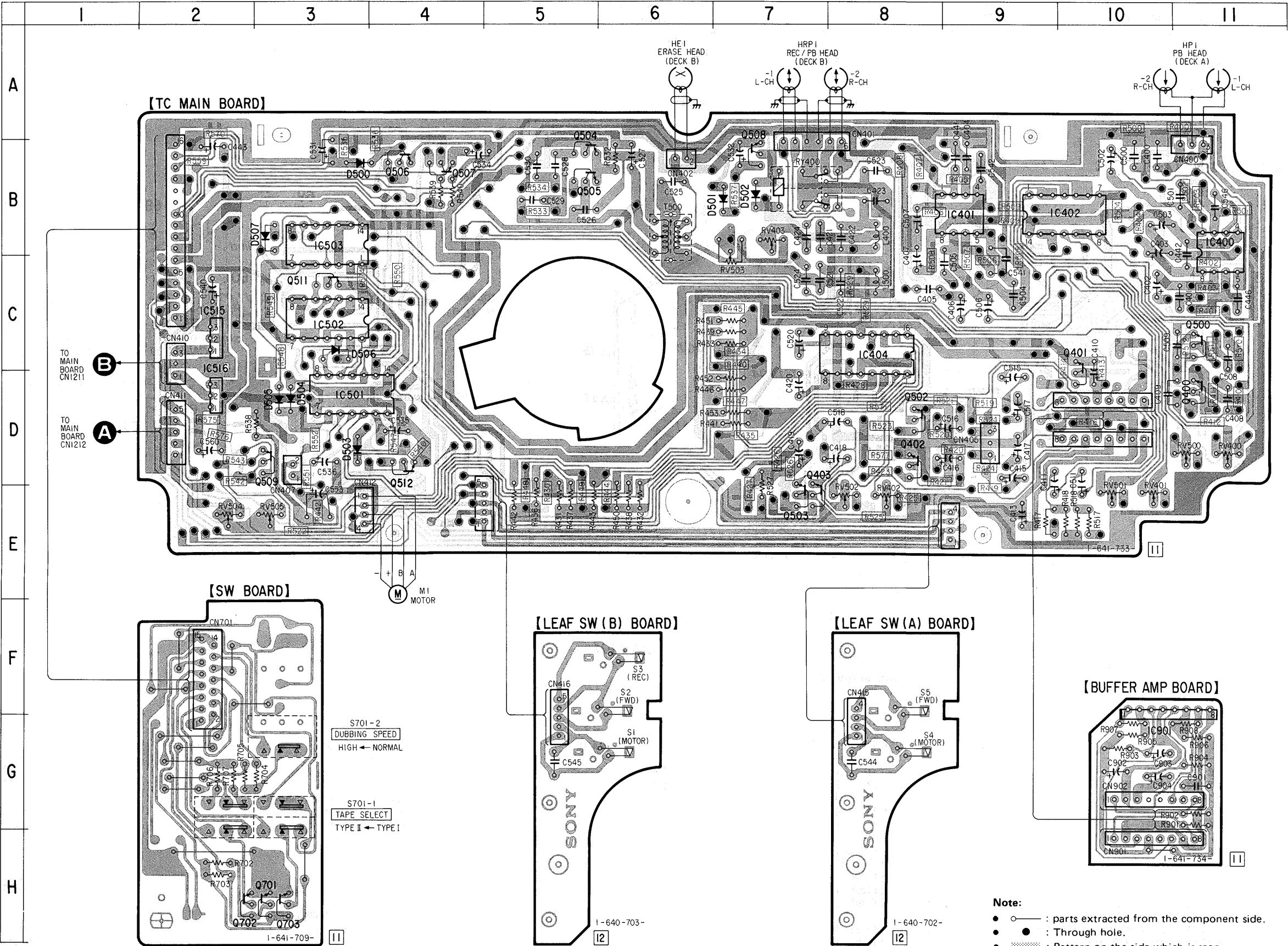


3-8. PRINTED WIRING BOARDS—TC Section—

- See page 8 for semiconductor lead layouts.
- See page 7 for circuit boards location.

● Semiconductor Location

Ref. No.	Location
D500	B-3
D501	B-7
D502	B-7
D503	D-3
D504	D-3
D505	D-3
D506	C-3
D507	B-3
IC400	B-11
IC401	B-9
IC402	B-10
IC404	C-8
IC501	D-3
IC502	C-3
IC503	B-3
IC515	C-2
IC516	D-2
IC901	G-10
Q400	D-11
Q401	C-10
Q402	D-8
Q403	E-7
Q500	C-11
Q502	D-8
Q503	E-7
Q504	B-5
Q505	B-5
Q506	B-4
Q507	B-4
Q508	B-8
Q509	D-3
Q511	C-3
Q512	D-4
Q701	H-3
Q702	H-2
Q703	H-3



Note:

- : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▧ : Pattern of the rear side.
- : Printed resistor from the rear side.

SECTION 4 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE(WHITE)...(RED)

↑ ↑
Parts color Cabinet's color

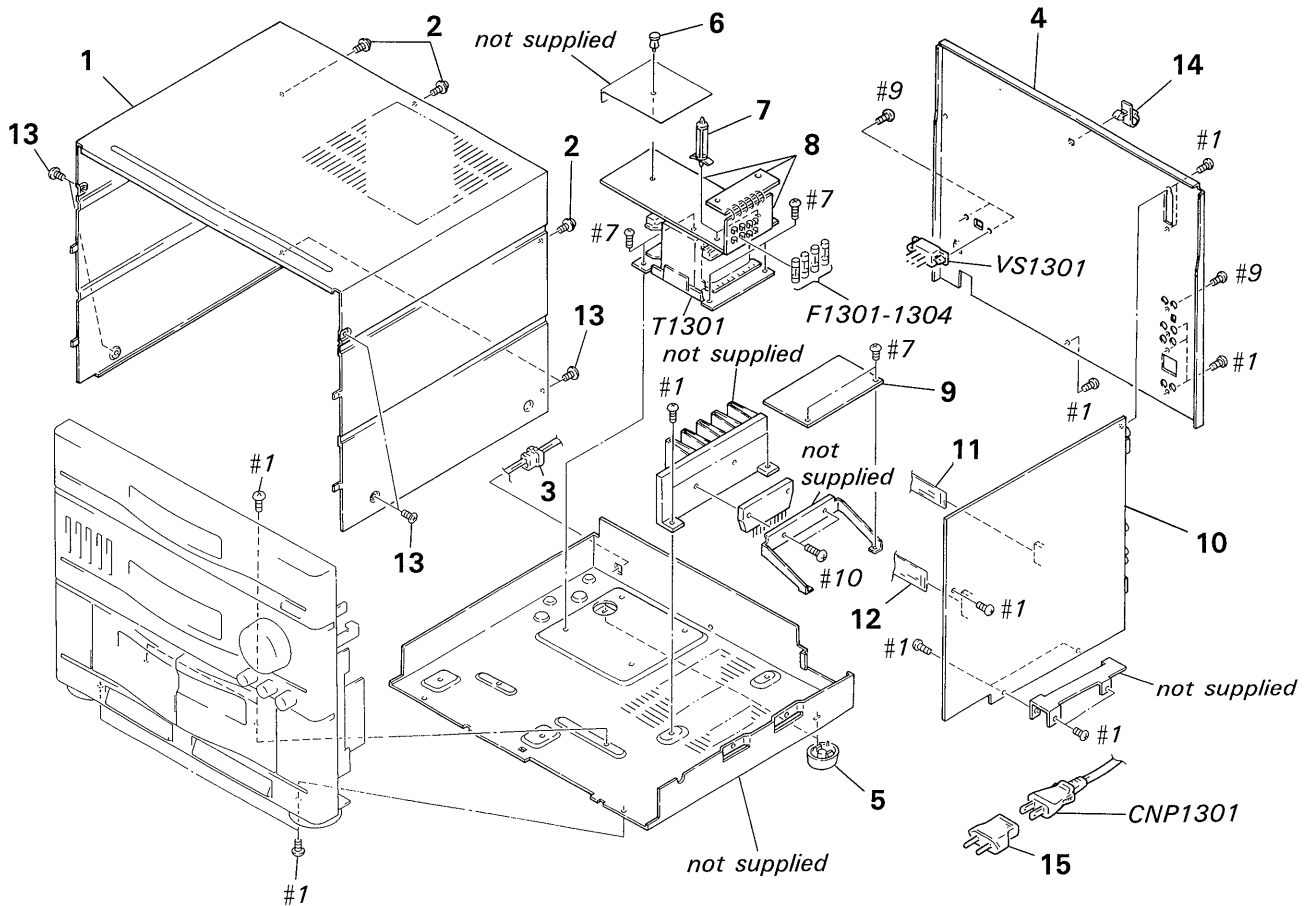
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- hardware (#mark) list is given in the last of this parts list.

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

AUS: Australian

MY: Malaysian

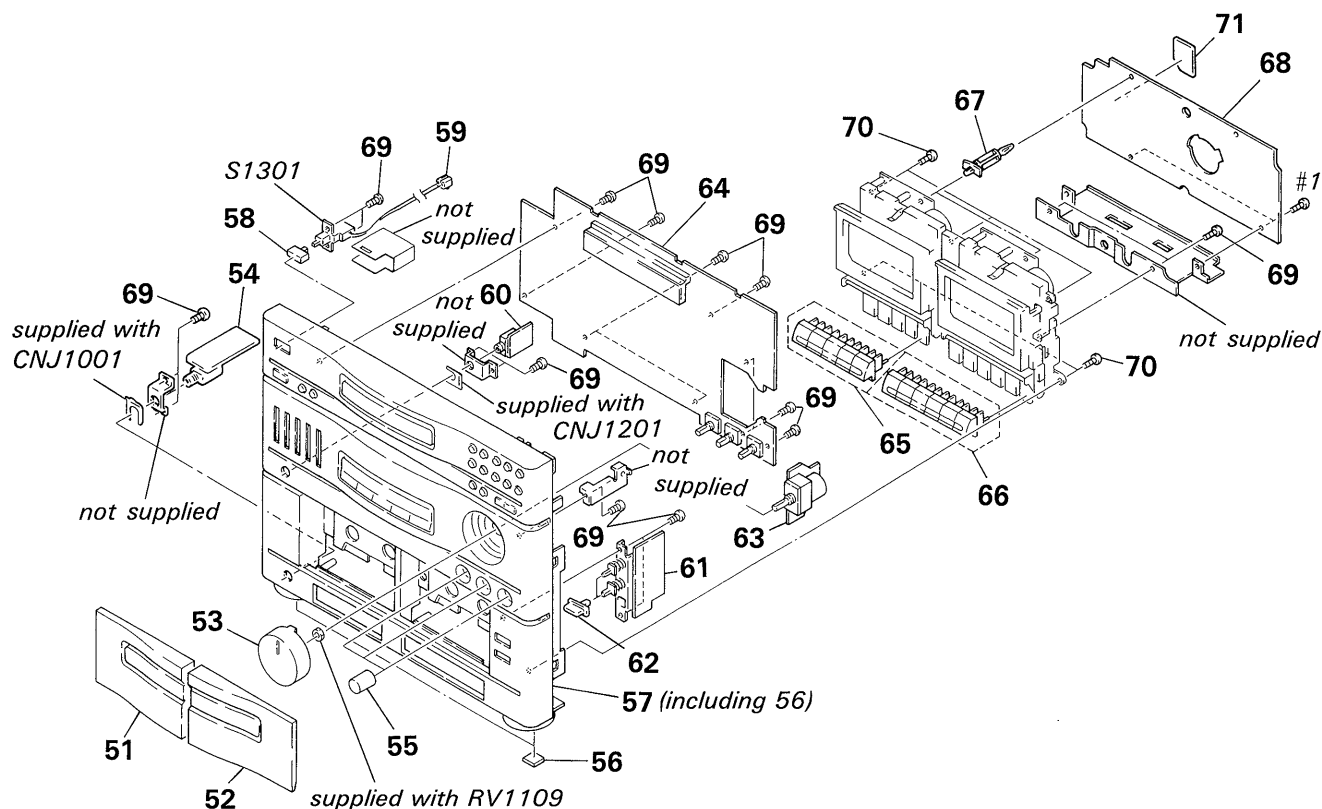
4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
* 1	4-942-291-11	CASE	
2	4-929-973-01	SCREW (CASE, 3 POINT)	
* 3	3-703-244-00	BUSHING (2104), CORD (AUS)	
* 3	3-703-571-31	BUSHING (S) (4516), CORD (E, MY)	
* 4	4-948-282-71	PANEL, BACK (E, MY)	
* 4	4-948-282-91	PANEL, BACK (AUS)	
5	X-4941-228-1	FOOT ASSY	
6	4-812-134-11	RIVET NYLON, 3.5	
* 7	4-924-098-81	HOLDER, PC BOARD	
* 8	1-641-708-11	POWER BOARD	
* 9	A-4345-918-A	POWER AMP BOARD, COMPLETE	
* 10	A-4345-915-A	MAIN BOARD, COMPLETE (E2, AUS)	
* 10	A-4356-064-A	MAIN BOARD, COMPLETE (E3, MY)	

Ref. No.	Part No.	Description	Remark
11	1-590-459-11	WIRE, FLAT TYPE (11 CORE)	
12	1-590-578-11	WIRE, FLAT TYPE (19 CORE)	
13	3-363-099-01	SCREW (CASE +3X8 TP2)	
* 14	4-949-235-01	HOOK	
	1-569-007-11	ADAPTER, CONVERSION 2P (E3, MY)	
	CNP13011-575-653-11	CORD, POWER (E, MY)	
	CNP13011-690-608-11	CORD, POWER (WITH CONNECTOR) (AUS)	
	F1301	1-532-237-00 FUSE, TIME LAG (3.15A)	
	F1302	1-532-237-00 FUSE, TIME LAG (3.15A)	
	F1303	1-532-203-00 FUSE (2.0A)	
	F1304	1-532-203-00 FUSE (2.0A)	
	T1301	1-450-311-11 TRANSFORMER, POWER	
	VS1301	1-570-046-21 SWITCH, VOLTAGE CHANGE	

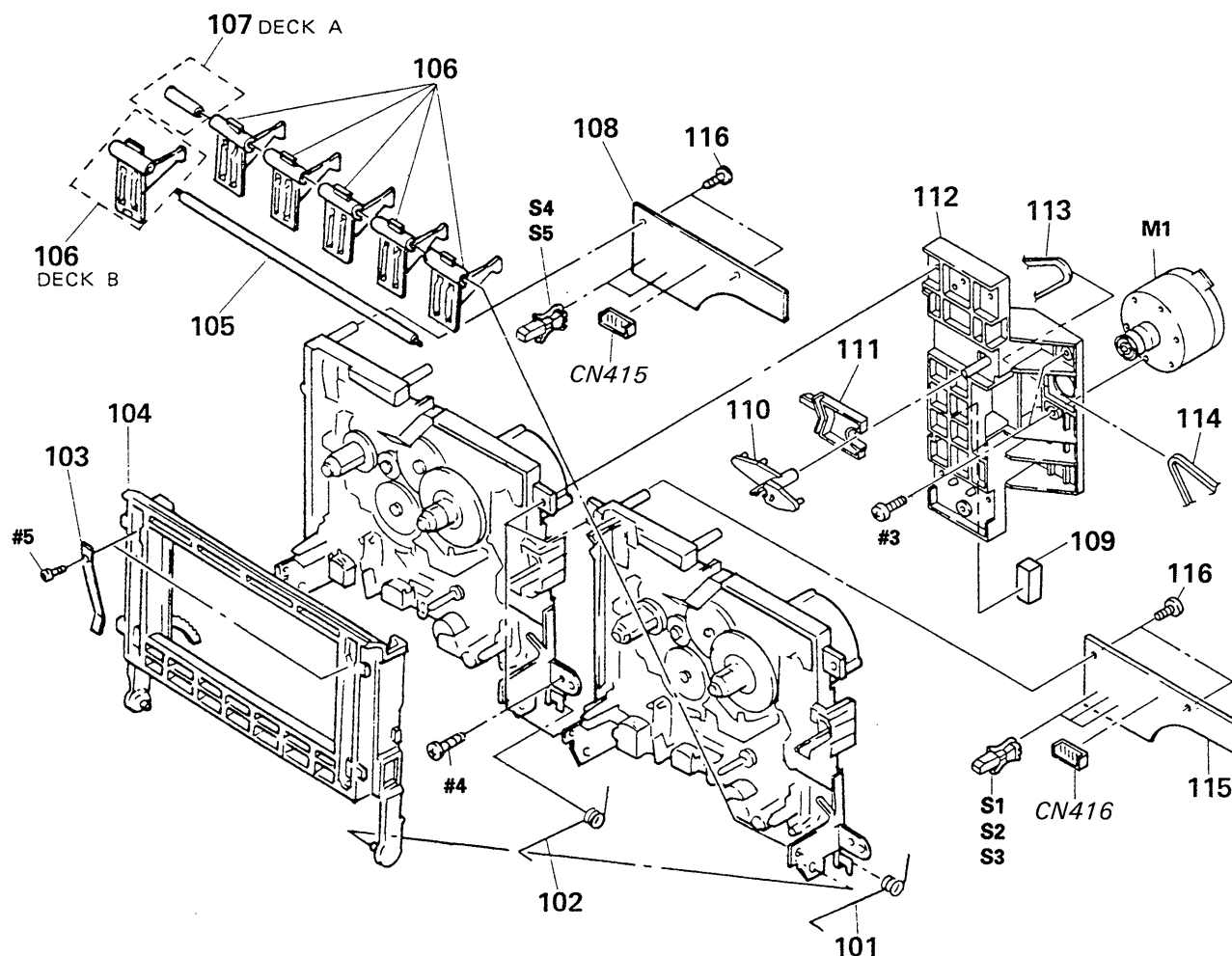
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	A-4325-346-A	LID (A) ASSY, CASSETTE	
52	A-4325-347-A	LID (B) ASSY, CASSETTE	
53	A-4323-382-A	KNOB (VOL.) ASSY	
* 54	1-641-710-11	MIC BOARD	
55	4-948-270-01	KNOB (DSB)	
56	4-948-236-01	CUSHION (107)	
57	A-4325-351-A	PANEL ASSY, FRONT	
58	4-930-783-11	BUTTON (PO)	
⚠ 59	1-690-708-11	CORD (WITH CONNECTOR)	
* 60	1-641-707-11	H. P. BOARD	

Ref. No.	Part No.	Description	Remark
* 61	1-641-709-11	SW BOARD	
62	4-948-257-01	BUTTON (DDT)	
* 63	1-641-706-11	VOL BOARD	
* 64	A-4345-919-A	PANEL BOARD, COMPLETE	
65	4-948-258-01	BUTTON (MD-A)	
66	4-948-259-01	BUTTON (MD-B)	
* 67	4-924-098-31	HOLDER, PC BOARD	
* 68	A-4345-914-A	TC MAIN BOARD, COMPLETE	
69	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
70	4-928-635-21	SCREW, +BV (2.6X10) TAPPING	
* 71	1-641-734-11	BUFFER AMP BOARD	
⚠ S1301	1-572-267-61	SWITCH, PUSH (AC POWER) (1 KEY)	

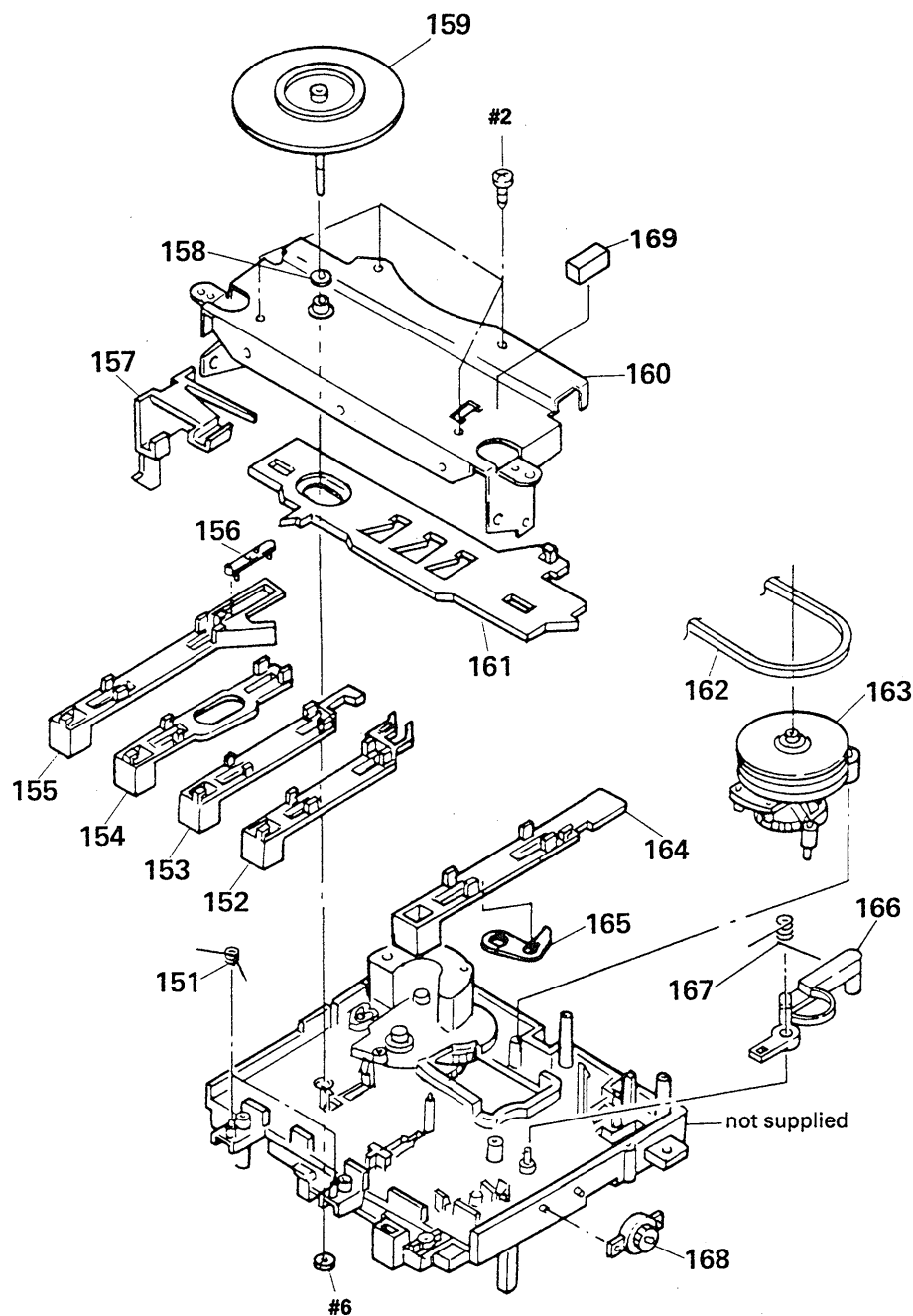
4-3. MECHANISM DECK SECTION-1 (TCM-180VW-H7)



Ref. No.	Part No.	Description	Remark
101	3-358-287-01	SPRING (LOADING A), TORSION	
102	3-358-229-01	SPRING (LOADING), TORSION	
103	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
104	3-358-266-02	HOLDER, CASSETTE	
105	3-371-917-01	SHAFT (BUTTON SHAFT 4)	
106	3-369-335-01	LEVER (BUTTON BASE F)	
* 107	3-358-216-01	COLLAR (DECK A)	
* 108	1-640-702-11	LEAF SW (A) BOARD	
* 109	3-358-289-01	SPACER (VIBRATION PROOF MAT)	
110	3-358-203-01	LEVER (TRIGGER)	
111	3-358-202-01	SLIDER (TRIGGER)	
* 112	3-363-930-01	BRAKET (JOINT BASE)	

Ref. No.	Part No.	Description	Remark
113	3-358-230-01	BELT (A1)	
114	3-364-777-01	BELT (WH)	
* 115	1-640-703-11	LEAF SW (B) BOARD	
116	4-928-635-01	SCREW +BV (2.6X8) TAPPING	
* CN415	1-568-942-11	PIN, CONNECTOR 4P	
* CN416	1-568-943-11	PIN, CONNECTOR 5P	
M1	X-3362-377-1	MOTOR (WH) ASSY	
S1	1-571-736-11	SWITCH, LEAF (MOTOR)	
S2	1-571-736-11	SWITCH, LEAF (FWD)	
S3	1-571-736-11	SWITCH, LEAF (REC)	
S4	1-571-736-11	SWITCH, LEAF (MOTOR)	
S5	1-571-736-11	SWITCH, LEAF (FWD)	

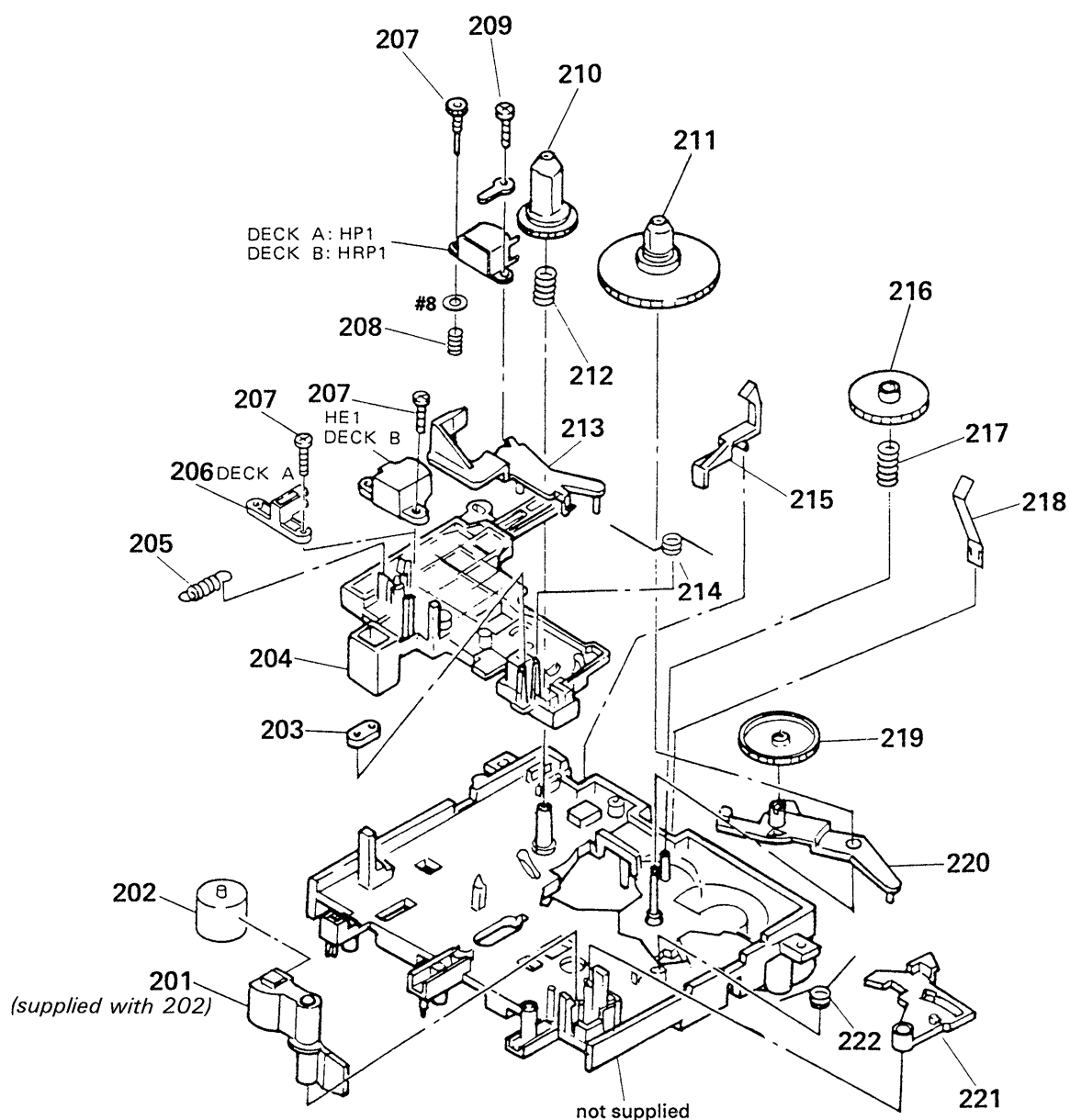
4-4. MECHANISM DECK SECTION-2 (TCM-180VW-H7)



Ref. No.	Part No.	Description	Remark
151	3-358-232-01	SPRING (S-P F-R), TORSION	
152	3-358-258-01	SLIDER (REW)	
153	3-358-257-01	SLIDER (FF)	
154	3-358-256-01	SLIDER (STOP/EJECT)	
155	3-358-260-01	SLIDER (PAUSE)	
* 156	3-358-226-01	LEVER (PAUSE LEVER)	
* 157	3-358-261-02	SLIDER (HOLDER LOCK)	
158	3-701-437-01	WASHER	
159	X-3358-205-1	FLYWHEEL (A) ASSY (DECK A)	
159	X-3358-206-1	FLYWHEEL (B) ASSY (DECK B)	
* 160	X-3358-208-1	BRACKET (B) ASSY	

Ref. No.	Part No.	Description	Remark
* 161	3-358-249-01	SLIDER (LOCK PLATE)	
162	3-358-230-01	BELT (A1)	
163	X-3358-202-1	LEVER (FR ARM) ASSY	
164	3-358-259-01	SLIDER (REC) (DECK B)	
* 165	3-358-204-01	LEVER (REC SAFETY) (DECK B)	
166	3-358-286-01	LEVER (MOTOR LEVER)	
167	3-358-214-01	SPRING (LOCK), TORSION (DECK A)	
167	3-358-233-01	SPRING (REC-LOCK), TORSION (DECK B)	
168	3-319-224-41	DAMPER, SMALL	
* 169	3-358-289-01	SPACER (VIBRATION PROOF MAT)	

4-5. MECHANISM DECK SECTION-3 (TCM-180VW-H7)



Ref. No.	Part No.	Description	Remark
201	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
202	3-578-143-11	PINCH ROLLER	
* 203	3-358-215-01	BUSHING (WIRE KIT RETAINER)	
204	3-358-265-01	SLIDER (HEAD PC BOARD A)	
205	3-358-217-01	SPRING, TENSION	
* 206	3-363-931-01	GUIDE, TAPE (DECK A)	
207	3-358-288-11	SCREW (T), AZIMUTH	
208	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
209	3-358-288-01	SCREW (T), AZIMUTH	
210	3-358-248-01	GEAR (SUPPLY REEL)	
211	X-3358-203-1	TABLE (T) ASSY, REEL	
212	3-358-208-01	SPRING (SUPPLY), COMPRESSION	
* 213	3-358-251-01	LEVER (TENSION DETECTION ARM)	

Ref. No.	Part No.	Description	Remark
214	3-358-228-01	SPRING, TORSION	
* 215	3-358-255-01	LEVER (GB LEVER)	
* 216	3-358-224-01	GEAR (FF GEAR)	
217	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
218	3-358-227-01	SPRING, LEAF	
* 219	3-358-284-01	GEAR (TU GEAR)	
* 220	3-358-252-01	LEVER (TU ARM)	
* 221	3-358-253-01	LEVER (SHUT-OFF LEVER)	
222	3-358-243-01	SPRING (TU-SHUT), TORSION	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP1	1-543-319-11	HEAD, MAGNETIC (PB) (DECK A)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB) (DECK B)	

SECTION 5 ELECTRICAL PARTS LIST

BUFFER AMP

H.P.

LEAF SW (A)

LEAF SW (B)

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA.: μ A. uPA.: μ PA.
uPB.: μ PB. uPC.: μ PC. uPD.: μ PD.
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

AUS: Australian
MY: Malaysian

Ref. No.	Part No.	Description	Remark
*	1-641-734-11	BUFFER AMP BOARD *****	
		< CAPACITOR >	
C901	1-164-159-11	CERAMIC 0.1uF	50V
C902	1-124-584-00	ELECT 100uF 20%	10V
C903	1-124-257-00	ELECT 2.2uF 20%	50V
C904	1-124-257-00	ELECT 2.2uF 20%	50V
		< CONNECTOR >	
* CN901	1-573-090-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN902	1-573-090-11	PIN, CONNECTOR (PC BOARD) 8P	
		< IC >	
IC901	8-759-634-50	IC M5218AL	
		< RESISTOR >	
R901	1-249-441-11	CARBON 100K 5% 1/4W	
R902	1-249-441-11	CARBON 100K 5% 1/4W	
R903	1-249-441-11	CARBON 100K 5% 1/4W	
R904	1-249-441-11	CARBON 100K 5% 1/4W	
R905	1-249-425-11	CARBON 4.7K 5% 1/4W	
R906	1-249-425-11	CARBON 4.7K 5% 1/4W	
R907	1-247-881-00	CARBON 120K 5% 1/4W	
R908	1-247-881-00	CARBON 120K 5% 1/4W	

*	1-641-707-11	H. P. BOARD *****	
		< JACK >	
CNJ12011	691-003-11	JACK, LARGE TYPE *****	
*	1-640-702-11	LEAF SW (A) BOARD *****	
		< CAPACITOR >	
C544	1-164-159-11	CERAMIC 0.1uF	50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN415	1-568-942-11	PIN, CONNECTOR 4P	
		< SWITCH >	
S4	1-571-736-11	SWITCH, LEAF (MOTOR)	
S5	1-571-736-11	SWITCH, LEAF (FWD)	

*	1-640-703-11	LEAF SW (B) BOARD *****	
		< CAPACITOR >	
C545	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN416	1-568-943-11	PIN, CONNECTOR 5P	
		< SWITCH >	
S1	1-571-736-11	SWITCH, LEAF (MOTOR)	
S2	1-571-736-11	SWITCH, LEAF (FWD)	
S3	1-571-736-11	SWITCH, LEAF (REC)	

*	A-4345-915-A	MAIN BOARD, COMPLETE (E2, AUS)	
*	A-4356-064-A	MAIN BOARD, COMPLETE (E3, MY) *****	
*	4-942-204-01	PLATE, GROUND	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
		< CAPACITOR >	
C302	1-124-477-11	ELECT 47uF 20%	25V
C303	1-161-379-00	CERAMIC 0.01uF 20%	25V
C307	1-161-379-00	CERAMIC 0.01uF 20%	25V
C308	1-161-379-00	CERAMIC 0.01uF 20%	25V
C309	1-161-379-00	CERAMIC 0.01uF 20%	25V
C310	1-124-477-11	ELECT 47uF 20%	25V
C311	1-161-379-00	CERAMIC 0.01uF 20%	25V
C312	1-101-006-00	CERAMIC 0.047uF	50V
C313	1-123-382-00	ELECT 3.3uF 20%	100V

Ref. No.	Part No.	Description	Remark		
C314	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C315	1-161-329-00	CERAMIC	0. 0068uF	30%	16V
C316	1-162-282-31	CERAMIC	100PF	10%	50V
C318	1-124-903-11	ELECT	1uF	20%	50V
C320	1-124-903-11	ELECT	1uF	20%	50V
C321	1-124-902-00	ELECT	0. 47uF	20%	50V
C322	1-124-463-00	ELECT	0. 1uF	20%	50V
C323	1-161-329-00	CERAMIC	0. 0068uF	30%	16V
C324	1-161-329-00	CERAMIC	0. 0068uF	30%	16V
C325	1-124-477-11	ELECT	47uF	20%	25V
C326	1-124-907-11	ELECT	10uF	20%	50V
C327	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C328	1-124-463-00	ELECT	0. 1uF	20%	50V
C329	1-124-927-11	ELECT	4. 7uF	20%	100V
C330	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C331	1-126-176-11	ELECT	220uF	20%	10V
C332	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C335	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C336	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C341	1-123-382-00	ELECT	3. 3uF	20%	100V
C342	1-123-382-00	ELECT	3. 3uF	20%	100V
C343	1-123-382-00	ELECT	3. 3uF	20%	100V
C344	1-123-382-00	ELECT	3. 3uF	20%	100V
C345	1-161-375-00	CERAMIC	0. 0022uF	20%	50V
C346	1-161-375-00	CERAMIC	0. 0022uF	20%	50V
C361	1-164-098-11	CERAMIC	0. 047uF		12V
C362	1-161-494-00	CERAMIC	0. 022uF		25V
C371	1-162-199-31	CERAMIC	10PF	5%	50V
C501	1-102-961-00	CERAMIC	27PF	5%	50V
C502	1-102-961-00	CERAMIC	27PF	5%	50V
C503	1-124-477-11	ELECT	47uF	20%	25V
C504	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C505	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C506	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C507	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C521	1-124-925-11	ELECT	2. 2uF	20%	100V
C522	1-124-463-00	ELECT	0. 1uF	20%	50V
C523	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C524	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C525	1-124-477-11	ELECT	47uF	20%	25V
C1001	1-124-925-11	ELECT	2. 2uF	20%	100V
C1002	1-162-282-31	CERAMIC	100PF	10%	50V
C1003	1-162-282-31	CERAMIC	100PF	10%	50V
C1004	1-124-477-11	ELECT	47uF	20%	25V
C1005	1-161-377-00	CERAMIC	0. 0047uF	20%	16V
C1006	1-161-374-11	CERAMIC	0. 0015uF	20%	50V
C1007	1-124-464-11	ELECT	0. 22uF	20%	50V
C1008	1-124-477-11	ELECT	47uF	20%	25V

Ref. No.	Part No.	Description	Remark		
C1009	1-124-925-11	ELECT	2. 2uF	20%	100V
C1010	1-124-477-11	ELECT	47uF	20%	25V
C1012	1-124-925-11	ELECT	2. 2uF	20%	100V
C1013	1-162-290-31	CERAMIC	470PF	10%	50V
C1014	1-161-494-00	CERAMIC	0. 022uF		25V
C1025	1-162-286-31	CERAMIC	220PF	10%	50V
C1026	1-162-286-31	CERAMIC	220PF	10%	50V
C1051	1-124-925-11	ELECT	2. 2uF	20%	100V
C1052	1-162-282-31	CERAMIC	100PF	10%	50V
C1053	1-162-282-31	CERAMIC	100PF	10%	50V
C1054	1-124-477-11	ELECT	47uF	20%	25V
C1055	1-161-377-00	CERAMIC	0. 0047uF	20%	16V
C1056	1-161-374-11	CERAMIC	0. 0015uF	20%	50V
C1057	1-124-464-11	ELECT	0. 22uF	20%	50V
C1058	1-124-477-11	ELECT	47uF	20%	25V
C1059	1-124-925-11	ELECT	2. 2uF	20%	100V
C1060	1-124-477-11	ELECT	47uF	20%	25V
C1062	1-124-925-11	ELECT	2. 2uF	20%	100V
C1063	1-162-290-31	CERAMIC	470PF	10%	50V
C1064	1-161-494-00	CERAMIC	0. 022uF		25V
C1075	1-162-286-31	CERAMIC	220PF	10%	50V
C1076	1-162-286-31	CERAMIC	220PF	10%	50V
C1212	1-126-233-11	ELECT	22uF	20%	50V
C1213	1-126-233-11	ELECT	22uF	20%	50V
C1221	1-126-101-11	ELECT	100uF	20%	16V
C1222	1-126-176-11	ELECT	220uF	20%	10V
C1223	1-126-176-11	ELECT	220uF	20%	10V
C1262	1-126-233-11	ELECT	22uF	20%	50V
C1263	1-126-233-11	ELECT	22uF	20%	50V
C1302	1-102-394-11	CERAMIC	0. 01uF		250V
C1304	1-126-413-11	ELECT	3300uF	20%	35V
C1305	1-126-413-11	ELECT	3300uF	20%	35V
C1306	1-124-477-11	ELECT	47uF	20%	25V
C1308	1-126-101-11	ELECT	100uF	20%	16V
C1309	1-126-101-11	ELECT	100uF	20%	16V
C1312	1-124-563-11	ELECT	2200uF	20%	25V
C1313	1-124-563-11	ELECT	2200uF	20%	25V
C1319	1-124-463-00	ELECT	0. 1uF	20%	50V
C1320	1-124-907-11	ELECT	10uF	20%	50V
C1321	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C1322	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C1324	1-124-907-11	ELECT	10uF	20%	50V
C1326	1-124-907-11	ELECT	10uF	20%	50V
C1330	1-126-101-11	ELECT	100uF	20%	16V
C1331	1-102-394-11	CERAMIC	0. 01uF		250V
C1335	1-124-907-11	ELECT	10uF	20%	50V (E2, AUS)
C1336	1-126-101-11	ELECT	100uF	20%	16V (E2, AUS)
C1341	1-124-907-11	ELECT	10uF	20%	50V

MAIN

Ref. No.	Part No.	Description	Remark		
C1346	1-124-925-11	ELECT	2. 2uF	20%	100V
C1351	1-124-122-11	ELECT	100uF	20%	50V
C1352	1-126-105-11	ELECT	1000uF	20%	35V
C1353	1-136-165-00	FILM	0. 1uF	5%	50V
C1354	1-136-165-00	FILM	0. 1uF	5%	50V
C1361	1-124-122-11	ELECT	100uF	20%	50V
< FILTER >					
CF301	1-577-070-81	FILTER, CERAMIC			
CF303	1-577-070-81	FILTER, CERAMIC			
CF304	1-577-075-11	OSCILLATOR, CERAMIC			
< CONNECTOR >					
* CN501	1-568-830-11	SOCKET, CONNECTOR 11P			
* CN1001	1-580-912-11	JACK, PIN 4P			
* CN1002	1-580-691-11	JACK, PIN 2P			
* CN1006	1-568-955-11	PIN, CONNECTOR 6P			
* CN1201	1-537-327-11	TERMINAL BOARD			
CN1202	1-569-130-11	JACK, PIN 2P			
* CN1203	1-564-506-11	PLUG, CONNECTOR 3P			
* CN1204	1-564-510-11	PLUG, CONNECTOR 7P			
* CN1205	1-568-934-11	PIN, CONNECTOR 7P			
CN1206	1-568-802-11	SOCKET, CONNECTOR 19P			
* CN1211	1-564-506-11	PLUG, CONNECTOR 3P			
* CN1212	1-564-508-11	PLUG, CONNECTOR 5P			
* CN1301	1-566-210-11	PIN, CONNECTOR 3P (E2, AUS)			
< DIODE >					
D1202	8-719-987-63	DIODE	1N4148M		
D1203	8-719-987-63	DIODE	1N4148M		
D1204	8-719-987-63	DIODE	1N4148M		
D1302	8-719-312-09	DIODE	RBA-402		
D1303	8-719-200-82	DIODE	11ES2		
D1304	8-719-200-82	DIODE	11ES2		
D1305	8-719-200-82	DIODE	11ES2		
D1306	8-719-200-82	DIODE	11ES2		
D1318	8-719-200-82	DIODE	11ES2		
D1319	8-719-200-82	DIODE	11ES2		
D1321	8-719-987-63	DIODE	1N4148M		
D1323	8-719-987-63	DIODE	1N4148M		
D1324	8-719-987-63	DIODE	1N4148M		
D1341	8-719-001-76	DIODE	UZL-12M3		
D1368	8-719-200-82	DIODE	11ES2		
D1369	8-719-200-82	DIODE	11ES2		
< FRONTEND >					
FE301	1-465-006-11	FRONT END (FM) (2 GANG)			
FE352	1-236-461-11	ENCAPSULATED COMPONENT			

Ref. No.	Part No.	Description	Remark		
< IC >					
IC301	8-759-821-45	IC	LA1851N		
IC501	8-759-820-91	IC	LC7218		
IC1001	8-759-634-51	IC	M5218AP		
IC1002	8-759-000-48	IC	MC14052BCP		
IC1003	8-759-634-51	IC	M5218AP		
IC1004	8-759-000-49	IC	MC14066BCP		
IC1202	8-759-111-68	IC	uPC1237HA		
IC1303	8-759-604-86	IC	M5F7807L		
IC1304	8-759-604-90	IC	M5F7907L		
IC1305	8-759-820-13	IC	L78MR06		
IC1306	8-759-231-58	IC	TA7812S (E2, AUS)		
< IFT >					
IFT301	1-404-713-11	TRANSFORMER, IF			
< COIL >					
L301	1-410-686-11	INDUCTOR	1mH		
< FILTER >					
LPF301	1-235-164-00	FILTER, LOW PASS			
LPF302	1-235-164-00	FILTER, LOW PASS			
< TRANSISTOR >					
Q303	8-729-231-00	TRANSISTOR	2SC2669-OY		
Q304	8-729-231-00	TRANSISTOR	2SC2669-OY		
Q305	8-729-900-80	TRANSISTOR	DTC114ES		
Q306	8-729-900-61	TRANSISTOR	DTA114ES		
Q307	8-729-900-80	TRANSISTOR	DTC114ES		
Q308	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q309	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q501	8-729-900-80	TRANSISTOR	DTC114ES		
Q502	8-729-900-61	TRANSISTOR	DTA114ES		
Q521	8-729-202-67	TRANSISTOR	2SK246-GR3		
Q522	8-729-201-84	TRANSISTOR	2SC3112-B		
Q1001	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q1002	8-729-900-36	TRANSISTOR	DTC124ES		
Q1204	8-729-900-63	TRANSISTOR	DTA124ES		
Q1302	8-729-209-15	TRANSISTOR	2SD2012		
< RESISTOR >					
R301	1-249-401-11	CARBON	47	5%	1/4W
R302	1-249-413-11	CARBON	470	5%	1/4W
R308	1-249-411-11	CARBON	330	5%	1/4W
R309	1-249-432-11	CARBON	18K	5%	1/4W
R310	1-249-411-11	CARBON	330	5%	1/4W
R311	1-249-434-11	CARBON	27K	5%	1/4W

MAIN

Ref. No.	Part No.	Description	Remark		
R312	1-249-414-11	CARBON	560	5%	1/4W
R313	1-249-405-11	CARBON	100	5%	1/4W
R315	1-249-404-00	CARBON	82	5%	1/4W
R316	1-249-429-11	CARBON	10K	5%	1/4W
R317	1-249-417-11	CARBON	1K	5%	1/4W
R318	1-249-435-11	CARBON	33K	5%	1/4W
R319	1-249-428-11	CARBON	8.2K	5%	1/4W
R320	1-249-432-11	CARBON	18K	5%	1/4W
R321	1-249-423-11	CARBON	3.3K	5%	1/4W
R322	1-249-429-11	CARBON	10K	5%	1/4W
R323	1-249-418-11	CARBON	1.2K	5%	1/4W
R324	1-249-429-11	CARBON	10K	5%	1/4W
R325	1-249-429-11	CARBON	10K	5%	1/4W
R326	1-249-409-11	CARBON	220	5%	1/4W
R327	1-249-437-11	CARBON	47K	5%	1/4W
R328	1-249-437-11	CARBON	47K	5%	1/4W
R331	1-247-891-00	CARBON	330K	5%	1/4W
R332	1-247-891-00	CARBON	330K	5%	1/4W
R333	1-249-421-11	CARBON	2.2K	5%	1/4W
R334	1-249-421-11	CARBON	2.2K	5%	1/4W
R335	1-249-420-11	CARBON	1.8K	5%	1/4W
R336	1-249-420-11	CARBON	1.8K	5%	1/4W
R337	1-249-426-11	CARBON	5.6K	5%	1/4W
R338	1-249-426-11	CARBON	5.6K	5%	1/4W
R361	1-249-437-11	CARBON	47K	5%	1/4W
R362	1-249-437-11	CARBON	47K	5%	1/4W
R501	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-417-11	CARBON	1K	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W
R510	1-249-401-11	CARBON	47	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-249-425-11	CARBON	4.7K	5%	1/4W
R513	1-249-417-11	CARBON	1K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-417-11	CARBON	1K	5%	1/4W
R521	1-249-423-11	CARBON	3.3K	5%	1/4W
R522	1-249-425-11	CARBON	4.7K	5%	1/4W
R523	1-249-414-11	CARBON	560	5%	1/4W
R524	1-249-417-11	CARBON	1K	5%	1/4W
R525	1-249-410-11	CARBON	270	5%	1/4W
R526	1-249-421-11	CARBON	2.2K	5%	1/4W
R527	1-249-425-11	CARBON	4.7K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-405-11	CARBON	100	5%	1/4W
R530	1-249-405-11	CARBON	100	5%	1/4W
R1001	1-249-417-11	CARBON	1K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R1002	1-249-441-11	CARBON	100K	5%	1/4W
R1003	1-249-416-11	CARBON	820	5%	1/4W
R1004	1-247-897-11	CARBON	560K	5%	1/4W
R1005	1-249-437-11	CARBON	47K	5%	1/4W
R1006	1-249-409-11	CARBON	220	5%	1/4W
R1007	1-249-441-11	CARBON	100K	5%	1/4W
R1008	1-249-409-11	CARBON	220	5%	1/4W
R1010	1-249-422-11	CARBON	2.7K	5%	1/4W
R1011	1-249-428-11	CARBON	8.2K	5%	1/4W
R1012	1-249-417-11	CARBON	1K	5%	1/4W
R1013	1-249-441-11	CARBON	100K	5%	1/4W
R1014	1-249-437-11	CARBON	47K	5%	1/4W
R1015	1-249-437-11	CARBON	47K	5%	1/4W
R1016	1-249-421-11	CARBON	2.2K	5%	1/4W
R1017	1-249-421-11	CARBON	2.2K	5%	1/4W
R1018	1-249-433-11	CARBON	22K	5%	1/4W
R1019	1-249-433-11	CARBON	22K	5%	1/4W
R1021	1-249-434-11	CARBON	27K	5%	1/4W
R1022	1-249-432-11	CARBON	18K	5%	1/4W
R1023	1-249-434-11	CARBON	27K	5%	1/4W
R1024	1-249-417-11	CARBON	1K	5%	1/4W
R1026	1-249-433-11	CARBON	22K	5%	1/4W
R1029	1-249-433-11	CARBON	22K	5%	1/4W
R1037	1-249-421-11	CARBON	2.2K	5%	1/4W
R1051	1-249-417-11	CARBON	1K	5%	1/4W
R1052	1-249-441-11	CARBON	100K	5%	1/4W
R1053	1-249-416-11	CARBON	820	5%	1/4W
R1054	1-247-897-11	CARBON	560K	5%	1/4W
R1055	1-249-437-11	CARBON	47K	5%	1/4W
R1056	1-249-409-11	CARBON	220	5%	1/4W
R1057	1-249-441-11	CARBON	100K	5%	1/4W
R1058	1-249-409-11	CARBON	220	5%	1/4W
R1060	1-249-422-11	CARBON	2.7K	5%	1/4W
R1061	1-249-428-11	CARBON	8.2K	5%	1/4W
R1062	1-249-417-11	CARBON	1K	5%	1/4W
R1063	1-249-441-11	CARBON	100K	5%	1/4W
R1071	1-249-434-11	CARBON	27K	5%	1/4W
R1072	1-249-432-11	CARBON	18K	5%	1/4W
R1073	1-249-434-11	CARBON	27K	5%	1/4W
R1074	1-249-417-11	CARBON	1K	5%	1/4W
R1095	1-249-433-11	CARBON	22K	5%	1/4W
R1222	1-249-415-11	CARBON	680	5%	1/4W
R1223	1-249-415-11	CARBON	680	5%	1/4W
△R1226	1-215-889-00	METAL OXIDE	330	5%	2W F
R1233	1-249-432-11	CARBON	18K	5%	1/4W
R1234	1-249-432-11	CARBON	18K	5%	1/4W
R1235	1-249-435-11	CARBON	33K	5%	1/4W
R1236	1-249-441-11	CARBON	100K	5%	1/4W
R1237	1-249-429-11	CARBON	10K	5%	1/4W

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

MAIN

MIC

PANEL

Ref. No.	Part No.	Description	Remark		
R1240	1-249-438-11	CARBON	56K	5%	1/4W
R1272	1-249-415-11	CARBON	680	5%	1/4W
R1273	1-249-415-11	CARBON	680	5%	1/4W
R1290	1-249-437-11	CARBON	47K	5%	1/4W
R1301	1-249-429-11	CARBON	10K	5%	1/4W
R1302	1-249-429-11	CARBON	10K	5%	1/4W
R1321	1-249-417-11	CARBON	1K	5%	1/4W
R1322	1-249-429-11	CARBON	10K	5%	1/4W
R1345	1-249-421-11	CARBON	2.2K	5%	1/4W
R1346	1-249-425-11	CARBON	4.7K	5%	1/4W (E2, AUS)
< VARIABLE RESISTOR >					
RV301	1-238-601-11	RES, ADJ, CARBON 22K			
RV302	1-238-601-11	RES, ADJ, CARBON 22K			
< RELAY >					
RY1201	1-515-533-11	RELAY			
< TRANSFORMER >					
T301	1-404-807-11	TRANSFORMER, DISCRIMINATOR			
< TERMINAL >					
* TM301	1-537-264-11	TERMINAL BOARD			
< TEST PIN >					
* TP1	1-560-060-00	PIN, CONNECTOR 2P			
< VIBRATOR >					
XT501	1-577-126-11	VIBRATOR, CRYSTAL (7.5MHz)			
XT501	1-579-383-11	VIBRATOR, CRYSTAL			

* 1-641-710-11	MIC BOARD				

< JACK >					
* J1001	1-691-002-21	JACK, LARGE TYPE			
< CAPACITOR >					
C1037	1-124-925-11	ELECT	2.2uF	20%	100V
C1038	1-162-294-31	CERAMIC	0.001uF	10%	50V
C1039	1-162-215-31	CERAMIC	47PF	5%	50V
C1040	1-162-282-31	CERAMIC	100PF	10%	50V
C1041	1-124-463-00	ELECT	0.1uF	20%	50V
C1043	1-162-282-31	CERAMIC	100PF	10%	50V
C1044	1-162-215-31	CERAMIC	47PF	5%	50V
C1045	1-124-925-11	ELECT	2.2uF	20%	100V

Ref. No.	Part No.	Description	Remark		
C1046	1-124-477-11	ELECT	47uF	20%	25V
C1047	1-124-477-11	ELECT	47uF	20%	25V
< IC >					
IC1005	8-759-634-51	IC M5218AP			
< RESISTOR >					
R1039	1-249-417-11	CARBON	1K	5%	1/4W
R1040	1-249-429-11	CARBON	10K	5%	1/4W
R1041	1-249-412-11	CARBON	390	5%	1/4W
R1042	1-249-434-11	CARBON	27K	5%	1/4W
R1043	1-249-433-11	CARBON	22K	5%	1/4W
R1045	1-249-437-11	CARBON	47K	5%	1/4W

*	A-4345-919-A PANEL BOARD, COMPLETE				

*	4-930-781-11 HOLDER (VO), LED				
*	4-942-301-01 HOLDER, FL TUBE				
*	4-948-247-01 HOLDER (FU), LED				
*	4-949-935-01 CUSHION (FL)				
< CAPACITOR >					
C603	1-136-169-00	FILM	0.22uF	5%	50V
C604	1-164-159-11	CERAMIC	0.1uF		50V
C605	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C606	1-164-159-11	CERAMIC	0.1uF		50V
C607	1-124-907-11	ELECT	10uF	20%	50V
C608	1-161-379-00	CERAMIC	0.01uF	20%	25V
C609	1-161-379-00	CERAMIC	0.01uF	20%	25V
C650	1-124-907-11	ELECT	10uF	20%	50V
C1101	1-124-257-00	ELECT	2.2uF	20%	50V
C1102	1-124-589-11	ELECT	47uF	20%	16V
C1103	1-162-282-31	CERAMIC	100PF	10%	50V
C1104	1-124-257-00	ELECT	2.2uF	20%	50V
C1105	1-124-464-11	ELECT	0.22uF	20%	50V
C1106	1-136-161-00	FILM	0.047uF	5%	50V
C1107	1-136-155-00	FILM	0.015uF	5%	50V
C1108	1-136-155-00	FILM	0.015uF	5%	50V
C1109	1-130-480-00	MYLAR	0.0056uF	5%	50V
C1110	1-161-327-00	CERAMIC	0.0033uF	20%	16V
C1111	1-136-155-00	FILM	0.015uF	5%	50V
C1112	1-136-157-00	FILM	0.022uF	5%	50V
C1113	1-136-153-00	FILM	0.01uF	5%	50V
C1114	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C1115	1-124-257-00	ELECT	2.2uF	20%	50V
C1121	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1123	1-162-286-31	CERAMIC	220PF	10%	50V

PANEL

Ref. No.	Part No.	Description	Remark		
C1131	1-162-215-31	CERAMIC	47PF	5%	50V
C1132	1-162-215-31	CERAMIC	47PF	5%	50V
C1151	1-124-257-00	ELECT	2. 2uF	20%	50V
C1152	1-124-589-11	ELECT	47uF	20%	16V
C1153	1-162-282-31	CERAMIC	100PF	10%	50V
C1154	1-124-257-00	ELECT	2. 2uF	20%	50V
C1155	1-124-464-11	ELECT	0. 22uF	20%	50V
C1156	1-136-161-00	FILM	0. 047uF	5%	50V
C1157	1-136-155-00	FILM	0. 015uF	5%	50V
C1158	1-136-155-00	FILM	0. 015uF	5%	50V
C1159	1-130-480-00	MYLAR	0. 0056uF	5%	50V
C1160	1-161-327-00	CERAMIC	0. 0033uF	20%	16V
C1161	1-136-155-00	FILM	0. 015uF	5%	50V
C1162	1-136-157-00	FILM	0. 022uF	5%	50V
C1163	1-136-153-00	FILM	0. 01uF	5%	50V
C1164	1-161-377-00	CERAMIC	0. 0047uF	20%	16V
C1165	1-124-257-00	ELECT	2. 2uF	20%	50V
C1173	1-162-286-31	CERAMIC	220PF	10%	50V
C1181	1-162-215-31	CERAMIC	47PF	5%	50V
C1182	1-162-215-31	CERAMIC	47PF	5%	50V
C1197	1-161-379-00	CERAMIC	0. 01uF	20%	25V
< CONNECTOR >					
* CN601	1-568-830-11	SOCKET, CONNECTOR 11P			
CN1101	1-568-802-11	SOCKET, CONNECTOR 19P			
< DIODE >					
D601	8-719-987-63	DIODE	1N4148M		
D602	8-719-010-26	DIODE	UZ-3. 9BSB		
D603	8-719-987-63	DIODE	1N4148M		
D604	8-719-987-63	DIODE	1N4148M		
D611	8-719-987-63	DIODE	1N4148M		
D612	8-719-987-63	DIODE	1N4148M		
D613	8-719-987-63	DIODE	1N4148M		
D614	8-719-987-63	DIODE	1N4148M		
D618	8-719-987-63	DIODE	1N4148M		
D622	8-719-987-63	DIODE	1N4148M		
D625	8-719-987-63	DIODE	1N4148M		
D641	8-719-200-82	DIODE	11ES2		
D1130	8-719-302-45	LED	SEL1210S (VIDEO)		
D1131	8-719-302-45	LED	SEL1210S (CD)		
D1132	8-719-302-45	LED	SEL1210S (PHONO)		
D1133	8-719-302-45	LED	SEL1210S (TUNER)		
D1134	8-719-302-45	LED	SEL1210S (TAPE)		
D1145	8-719-301-39	LED	SEL2210S-D (VOLUME)		
D1151	8-719-987-63	DIODE	1N4148M		
D1152	8-719-987-63	DIODE	1N4148M		
D1153	8-719-987-63	DIODE	1N4148M		

Ref. No.	Part No.	Description	Remark
< FILTER >			
FL601	1-519-711-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC601	8-759-053-97	IC uPD75212ACW-A21	
IC602	8-749-920-83	IC GP1U52XB	
IC1101	8-759-634-51	IC M5218AP	
IC1102	8-759-634-51	IC M5218AP	
IC1103	8-759-820-62	IC LB1639	
IC1104	8-759-916-12	IC TC74HC00P	
< COIL >			
L601	1-410-521-11	INDUCTOR	100uH
< TRANSISTOR >			
Q601	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q602	8-729-900-80	TRANSISTOR	DTC114ES
Q1101	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q1102	8-729-141-26	TRANSISTOR	2SC3622A-LK
Q1121	8-729-900-36	TRANSISTOR	DTC124ES
Q1122	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q1136	8-729-900-36	TRANSISTOR	DTC124ES
Q1138	8-729-900-36	TRANSISTOR	DTC124ES
Q1141	8-729-900-63	TRANSISTOR	DTA124ES
Q1143	8-729-900-80	TRANSISTOR	DTC114ES
Q1144	8-729-900-80	TRANSISTOR	DTC114ES
Q1145	8-729-900-61	TRANSISTOR	DTA114ES
Q1151	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q1152	8-729-141-26	TRANSISTOR	2SC3622A-LK
< RESISTOR >			
R601	1-249-429-11	CARBON	10K 5% 1/4W
R602	1-249-429-11	CARBON	10K 5% 1/4W
R603	1-249-423-11	CARBON	3.3K 5% 1/4W
R604	1-249-437-11	CARBON	47K 5% 1/4W
R605	1-249-433-11	CARBON	22K 5% 1/4W
R606	1-249-433-11	CARBON	22K 5% 1/4W
R607	1-249-439-11	CARBON	68K 5% 1/4W
R608	1-249-417-11	CARBON	1K 5% 1/4W
R609	1-249-405-11	CARBON	100 5% 1/4W
R610	1-249-429-11	CARBON	10K 5% 1/4W
R611	1-249-437-11	CARBON	47K 5% 1/4W
R612	1-249-417-11	CARBON	1K 5% 1/4W
R621	1-249-433-11	CARBON	22K 5% 1/4W
R622	1-249-433-11	CARBON	22K 5% 1/4W
R623	1-249-433-11	CARBON	22K 5% 1/4W
R624	1-249-433-11	CARBON	22K 5% 1/4W

PANEL

POWER AMP

Ref. No.	Part No.	Description	Remark
R641	1-249-417-11	CARBON	1K 5% 1/4W
R1101	1-249-441-11	CARBON	100K 5% 1/4W
R1102	1-249-417-11	CARBON	1K 5% 1/4W
R1103	1-249-431-11	CARBON	15K 5% 1/4W
R1104	1-249-441-11	CARBON	100K 5% 1/4W
R1105	1-249-433-11	CARBON	22K 5% 1/4W
R1106	1-249-424-11	CARBON	3.9K 5% 1/4W
R1107	1-249-441-11	CARBON	100K 5% 1/4W
R1108	1-249-427-11	CARBON	6.8K 5% 1/4W
R1109	1-249-412-11	CARBON	390 5% 1/4W
R1110	1-249-431-11	CARBON	15K 5% 1/4W
R1111	1-249-439-11	CARBON	68K 5% 1/4W
R1112	1-249-433-11	CARBON	22K 5% 1/4W
R1113	1-249-431-11	CARBON	15K 5% 1/4W
R1114	1-249-429-11	CARBON	10K 5% 1/4W
R1115	1-249-429-11	CARBON	10K 5% 1/4W
R1116	1-247-852-11	CARBON	7.5K 5% 1/4W
R1117	1-247-852-11	CARBON	7.5K 5% 1/4W
R1118	1-249-425-11	CARBON	4.7K 5% 1/4W
R1119	1-249-425-11	CARBON	4.7K 5% 1/4W
R1120	1-249-423-11	CARBON	3.3K 5% 1/4W
R1121	1-249-423-11	CARBON	3.3K 5% 1/4W
R1122	1-247-887-00	CARBON	220K 5% 1/4W
R1123	1-249-421-11	CARBON	2.2K 5% 1/4W
R1124	1-249-425-11	CARBON	4.7K 5% 1/4W
R1125	1-249-433-11	CARBON	22K 5% 1/4W
R1130	1-249-412-11	CARBON	390 5% 1/4W
R1132	1-249-412-11	CARBON	390 5% 1/4W
R1133	1-249-412-11	CARBON	390 5% 1/4W
R1135	1-249-433-11	CARBON	22K 5% 1/4W
R1143	1-249-433-11	CARBON	22K 5% 1/4W
R1145	1-249-412-11	CARBON	390 5% 1/4W
R1149	1-249-429-11	CARBON	10K 5% 1/4W
R1151	1-249-441-11	CARBON	100K 5% 1/4W
R1152	1-249-417-11	CARBON	1K 5% 1/4W
R1154	1-249-441-11	CARBON	100K 5% 1/4W
R1155	1-249-433-11	CARBON	22K 5% 1/4W
R1156	1-249-424-11	CARBON	3.9K 5% 1/4W
R1157	1-249-441-11	CARBON	100K 5% 1/4W
R1158	1-249-427-11	CARBON	6.8K 5% 1/4W
R1159	1-249-412-11	CARBON	390 5% 1/4W
R1160	1-249-431-11	CARBON	15K 5% 1/4W
R1161	1-249-439-11	CARBON	68K 5% 1/4W
R1162	1-249-433-11	CARBON	22K 5% 1/4W
R1163	1-249-431-11	CARBON	15K 5% 1/4W
R1164	1-249-429-11	CARBON	10K 5% 1/4W
R1165	1-249-429-11	CARBON	10K 5% 1/4W
R1166	1-247-852-11	CARBON	7.5K 5% 1/4W
R1167	1-247-852-11	CARBON	7.5K 5% 1/4W

Ref. No.	Part No.	Description	Remark
R1168	1-249-425-11	CARBON	4.7K 5% 1/4W
R1169	1-249-425-11	CARBON	4.7K 5% 1/4W
R1170	1-249-423-11	CARBON	3.3K 5% 1/4W
R1171	1-249-423-11	CARBON	3.3K 5% 1/4W
R1172	1-247-887-00	CARBON	220K 5% 1/4W
R1173	1-249-421-11	CARBON	2.2K 5% 1/4W
R1174	1-249-425-11	CARBON	4.7K 5% 1/4W

< VARIABLE RESISTOR >

RV1101	1-241-353-11	RES, VAR, CARBON	100K/100K (SURROUND)
RV1102	1-241-353-11	RES, VAR, CARBON	100K/100K (DBFB)
RV1103	1-241-351-11	RES, VAR, SLIDE	100K/100K (100Hz)
RV1104	1-241-351-11	RES, VAR, SLIDE	100K/100K (330Hz)
RV1105	1-241-351-11	RES, VAR, SLIDE	100K/100K (1KHz)
RV1106	1-241-351-11	RES, VAR, SLIDE	100K/100K (3.3KHz)
RV1107	1-241-351-11	RES, VAR, SLIDE	100K/100K (10KHz)
RV1108	1-241-352-11	RES, VAR, CARBON	100K/100K (BALANCE)

< SWITCH >

S601	1-554-303-21	SWITCH, TACTILE	(1)
S602	1-554-303-21	SWITCH, TACTILE	(2)
S603	1-554-303-21	SWITCH, TACTILE	(3)
S604	1-554-303-21	SWITCH, TACTILE	(4)
S605	1-554-303-21	SWITCH, TACTILE	(5)
S606	1-554-303-21	SWITCH, TACTILE	(6)
S607	1-554-303-21	SWITCH, TACTILE	(7)
S608	1-554-303-21	SWITCH, TACTILE	(8)
S609	1-554-303-21	SWITCH, TACTILE	(9)
S610	1-554-303-21	SWITCH, TACTILE	(0)
S611	1-554-303-21	SWITCH, TACTILE	(SHIFT)
S612	1-554-303-21	SWITCH, TACTILE	(BAND SELECT)
S613	1-554-303-21	SWITCH, TACTILE	(ST/MUTE)
S614	1-554-303-21	SWITCH, TACTILE	(DUAL MODE TUNING +)
S615	1-554-303-21	SWITCH, TACTILE	(DUAL MODE TUNING -)
S619	1-554-303-21	SWITCH, TACTILE	(MEMORY)
S636	1-554-303-21	SWITCH, TACTILE	(TAPE)
S637	1-554-303-21	SWITCH, TACTILE	(CD)
S638	1-554-303-21	SWITCH, TACTILE	(TUNER)
S639	1-554-303-21	SWITCH, TACTILE	(PHONO)
S640	1-554-303-21	SWITCH, TACTILE	(VIDEO)

< VIBRATOR >

X601	1-567-775-11	VIBRATOR, CERAMIC	(4.19MHz)
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* A-4345-918-A POWER AMP BOARD, COMPLETE

POWER AMP

POWER

Ref. No.	Part No.	Description	Remark			
< CAPACITOR >						
C1201	1-124-257-00	ELECT	2. 2uF	20%	50V	
C1202	1-162-286-31	CERAMIC	220PF	10%	50V	
C1203	1-162-286-31	CERAMIC	220PF	10%	50V	
C1204	1-124-477-11	ELECT	47uF	20%	25V	
C1205	1-124-910-11	ELECT	47uF	20%	50V	
C1206	1-124-122-11	ELECT	100uF	20%	50V	
C1207	1-136-165-00	FILM	0. 1uF	5%	50V	
C1208	1-126-233-11	ELECT	22uF	20%	50V	
C1209	1-136-165-00	FILM	0. 1uF	5%	50V	
C1210	1-136-163-00	FILM	0. 068uF	5%	50V	
C1211	1-136-163-00	FILM	0. 068uF	5%	50V	
C1220	1-124-910-11	ELECT	47uF	20%	50V	
C1251	1-124-257-00	ELECT	2. 2uF	20%	50V	
C1252	1-162-286-31	CERAMIC	220PF	10%	50V	
C1253	1-162-286-31	CERAMIC	220PF	10%	50V	
C1254	1-124-477-11	ELECT	47uF	20%	25V	
C1255	1-124-910-11	ELECT	47uF	20%	50V	
C1256	1-124-122-11	ELECT	100uF	20%	50V	
C1257	1-136-165-00	FILM	0. 1uF	5%	50V	
C1260	1-136-163-00	FILM	0. 068uF	5%	50V	
C1261	1-136-163-00	FILM	0. 068uF	5%	50V	
< DIODE >						
D1201	8-719-987-63	DIODE	1N4148M			
D1251	8-719-987-63	DIODE	1N4148M			
< IC >						
IC1201	8-749-900-96	IC	STK-4142MK2			
< COIL >						
L1201	1-420-872-00	COIL, AIR CORE				
L1251	1-420-872-00	COIL, AIR CORE				
< TRANSISTOR >						
Q1201	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
Q1202	8-729-900-80	TRANSISTOR	DTC114ES			
Q1203	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q1251	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA			
< RESISTOR >						
R1201	1-249-417-11	CARBON	1K	5%	1/4W	
R1202	1-249-438-11	CARBON	56K	5%	1/4W	
R1203	1-249-417-11	CARBON	1K	5%	1/4W	
R1204	1-249-438-11	CARBON	56K	5%	1/4W	
R1205	1-249-425-11	CARBON	4. 7K	5%	1/4W	
R1206	1-249-425-11	CARBON	4. 7K	5%	1/4W	

Ref. No.	Part No.	Description	Remark			
R1207	1-249-425-11	CARBON	4. 7K	5%	1/4W	
R1208	1-249-425-11	CARBON	4. 7K	5%	1/4W	
△R1209	1-212-881-11	FUSIBLE	100	5%	1/4W	F
△R1210	1-217-151-00	RES, METAL PLATE			0. 22	
R1211	1-249-417-11	CARBON	1K	5%	1/4W	
R1212	1-249-431-11	CARBON	15K	5%	1/4W	
R1213	1-249-441-11	CARBON	100K	5%	1/4W	
R1214	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R1215	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R1216	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R1217	1-249-421-11	CARBON	2. 2K	5%	1/4W	
R1218	1-249-397-11	CARBON	22	5%	1/4W	
R1219	1-249-397-11	CARBON	22	5%	1/4W	
R1220	1-249-397-11	CARBON	22	5%	1/4W	
R1221	1-249-397-11	CARBON	22	5%	1/4W	
R1227	1-249-429-11	CARBON	10K	5%	1/4W	
R1228	1-247-881-00	CARBON	120K	5%	1/4W	
R1229	1-249-439-11	CARBON	68K	5%	1/4W	
R1230	1-249-439-11	CARBON	68K	5%	1/4W	
R1231	1-249-417-11	CARBON	1K	5%	1/4W	
R1232	1-249-428-11	CARBON	8. 2K	5%	1/4W	
R1238	1-249-433-11	CARBON	22K	5%	1/4W	
R1239	1-249-426-11	CARBON	5. 6K	5%	1/4W	
R1251	1-249-417-11	CARBON	1K	5%	1/4W	
R1252	1-249-438-11	CARBON	56K	5%	1/4W	
R1253	1-249-417-11	CARBON	1K	5%	1/4W	
R1254	1-249-438-11	CARBON	56K	5%	1/4W	
R1255	1-249-425-11	CARBON	4. 7K	5%	1/4W	
R1256	1-249-425-11	CARBON	4. 7K	5%	1/4W	
R1257	1-249-425-11	CARBON	4. 7K	5%	1/4W	
R1258	1-249-425-11	CARBON	4. 7K	5%	1/4W	
△R1259	1-212-881-11	FUSIBLE	100	5%	1/4W	F
△R1260	1-217-151-00	RES, METAL PLATE			0. 22	
R1261	1-249-417-11	CARBON	1K	5%	1/4W	
R1262	1-249-431-11	CARBON	15K	5%	1/4W	
R1263	1-249-441-11	CARBON	100K	5%	1/4W	
R1268	1-249-397-11	CARBON	22	5%	1/4W	
R1269	1-249-397-11	CARBON	22	5%	1/4W	
R1270	1-249-397-11	CARBON	22	5%	1/4W	
R1271	1-249-397-11	CARBON	22	5%	1/4W	

* 1-641-708-11 POWER BOARD *****						
1-533-217-31 HOLDER, FUSE						
* 1-535-141-00 BASE POST 22MM (10MM PITCH) 4P						
* 1-564-321-00 PIN, CONNECTOR 2P						

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

POWER

SW

TC MAIN

Ref. No.	Part No.	Description	Remark
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< CAPACITOR >

△C1301	1-161-744-00	CERAMIC	0.01uF 400V
C1314	1-124-122-11	ELECT	100uF 20% 50V
C1315	1-124-927-11	ELECT	4.7uF 20% 100V
C1316	1-124-910-11	ELECT	47uF 20% 50V

< CONNECTOR >

* CN1301	1-564-509-11	PLUG, CONNECTOR 6P	
CN1302	1-506-469-11	CONNECTOR 4P, MALE	
* CN1350	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	

< DIODE >

D1307	8-719-002-60	DIODE UZL-33L	
D1309	8-719-014-66	DIODE UZP-5.6B	
D1311	8-719-200-82	DIODE 11ES2	

< TRANSISTOR >

Q1301	8-729-141-83	TRANSISTOR 2SB1094-LK	
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< RESISTOR >

R1303	1-249-421-11	CARBON	2.2K 5% 1/4W
R1304	1-249-425-11	CARBON	4.7K 5% 1/4W

* 1-641-709-11	SW BOARD	
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< JACK >

* CNJ701	1-568-834-11	SOCKET, CONNECTOR 15P	
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< TRANSISTOR >

Q701	8-729-900-89	TRANSISTOR DTC144ES	
Q702	8-729-900-89	TRANSISTOR DTC144ES	
Q703	8-729-900-89	TRANSISTOR DTC144ES	

< RESISTOR >

R702	1-249-437-11	CARBON	47K 5% 1/4W
R703	1-249-424-11	CARBON	3.9K 5% 1/4W
R704	1-249-427-11	CARBON	6.8K 5% 1/4W
R705	1-249-421-11	CARBON	2.2K 5% 1/4W
R706	1-249-416-11	CARBON	820 5% 1/4W

R707	1-249-423-11	CARBON	3.3K 5% 1/4W
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< SWITCH >

S701	1-572-995-11	SWITCH, PUSH (2 KEY)	
			(TAPE SELECT/DUBBING SPEED)

Ref. No.	Part No.	Description	Remark
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*	A-4345-914-A	TC MAIN BOARD, COMPLETE	
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1-535-995-11	JUMPER, FILM (WITH TERMINAL)	
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7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
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< CAPACITOR >

C400	1-162-289-31	CERAMIC	390PF 10% 50V
C401	1-136-157-00	FILM	0.022uF 5% 50V
C402	1-124-767-00	ELECT	2.2uF 20% 50V
C403	1-124-443-00	ELECT	100uF 20% 10V
C404	1-162-289-31	CERAMIC	390PF 10% 50V
C405	1-136-157-00	FILM	0.022uF 5% 50V
C406	1-124-767-00	ELECT	2.2uF 20% 50V
C407	1-124-443-00	ELECT	100uF 20% 10V
C408	1-130-479-00	MYLAR	0.0047uF 5% 50V
C409	1-162-289-31	CERAMIC	390PF 10% 50V
C411	1-124-925-11	ELECT	2.2uF 20% 100V
C413	1-124-472-11	ELECT	470uF 20% 10V
C415	1-124-257-00	ELECT	2.2uF 20% 50V
C416	1-126-163-11	ELECT	4.7uF 20% 50V
C417	1-124-465-00	ELECT	0.47uF 20% 50V
C418	1-124-907-11	ELECT	10uF 20% 50V
C419	1-124-907-11	ELECT	10uF 20% 50V
C420	1-124-907-11	ELECT	10uF 20% 50V
C421	1-162-284-31	CERAMIC	150PF 10% 50V
C422	1-136-273-91	FILM	75PF 5% 630V
C423	1-136-271-00	FILM	56PF 5% 630V
C424	1-162-280-31	CERAMIC	82PF 10% 50V
C441	1-162-282-31	CERAMIC	100PF 10% 50V
C442	1-164-159-11	CERAMIC	0.1uF 50V
C443	1-124-903-11	ELECT	1uF 20% 50V
C446	1-162-282-31	CERAMIC	100PF 10% 50V
C500	1-162-289-31	CERAMIC	390PF 10% 50V
C501	1-136-157-00	FILM	0.022uF 5% 50V
C502	1-124-767-00	ELECT	2.2uF 20% 50V
C503	1-124-443-00	ELECT	100uF 20% 10V
C504	1-162-289-31	CERAMIC	390PF 10% 50V
C505	1-136-157-00	FILM	0.022uF 5% 50V
C506	1-124-767-00	ELECT	2.2uF 20% 50V
C507	1-124-443-00	ELECT	100uF 20% 10V
C508	1-130-479-00	MYLAR	0.0047uF 5% 50V
C509	1-162-289-31	CERAMIC	390PF 10% 50V
C511	1-124-925-11	ELECT	2.2uF 20% 100V
C515	1-124-257-00	ELECT	2.2uF 20% 50V
C516	1-126-163-11	ELECT	4.7uF 20% 50V
C517	1-124-465-00	ELECT	0.47uF 20% 50V
C518	1-124-907-11	ELECT	10uF 20% 50V
C520	1-124-907-11	ELECT	10uF 20% 50V

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

TC MAIN

Ref. No.	Part No.	Description	Remark		
C521	1-162-284-31	CERAMIC	150PF	10%	50V
C522	1-136-273-91	FILM	75PF	5%	630V
C523	1-136-271-00	FILM	56PF	5%	630V
C524	1-162-280-31	CERAMIC	82PF	10%	50V
C525	1-136-562-11	FILM	0.0082uF	5%	630V
C526	1-130-482-00	MYLAR	0.0082uF	5%	50V
C527	1-124-925-11	ELECT	2.2uF	20%	100V
C528	1-130-482-00	MYLAR	0.0082uF	5%	50V
C529	1-130-478-00	MYLAR	0.0039uF	5%	50V
C530	1-130-478-00	MYLAR	0.0039uF	5%	50V
C531	1-124-902-00	ELECT	0.47uF	20%	50V
C532	1-124-925-11	ELECT	2.2uF	20%	100V
C533	1-124-556-11	ELECT	2200uF	20%	16V
C534	1-124-120-11	ELECT	220uF	20%	25V
C535	1-124-927-11	ELECT	4.7uF	20%	100V
C536	1-124-903-11	ELECT	1uF	20%	50V
C540	1-124-472-11	ELECT	470uF	20%	10V
C541	1-162-282-31	CERAMIC	100PF	10%	50V
C542	1-164-159-11	CERAMIC	0.1uF		50V
C546	1-162-282-31	CERAMIC	100PF	10%	50V
C560	1-124-472-11	ELECT	470uF	20%	10V
< CONNECTOR >					
* CN400	1-564-506-11	PLUG, CONNECTOR 3P			
* CN401	1-564-509-11	PLUG, CONNECTOR 6P			
* CN402	1-564-505-11	PLUG, CONNECTOR 2P			
* CN405	1-560-061-00	PIN, CONNECTOR 3P			
* CN407	1-560-060-00	PIN, CONNECTOR 2P			
* CN410	1-564-506-11	PLUG, CONNECTOR 3P			
* CN411	1-564-508-11	PLUG, CONNECTOR 5P			
* CN412	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
< DIODE >					
D500	8-719-987-63	DIODE	1N4148M		
D501	8-719-987-63	DIODE	1N4148M		
D502	8-719-987-63	DIODE	1N4148M		
D503	8-719-987-63	DIODE	1N4148M		
D504	8-719-987-63	DIODE	1N4148M		
D505	8-719-987-63	DIODE	1N4148M		
D506	8-719-987-63	DIODE	1N4148M		
D507	8-719-987-63	DIODE	1N4148M		
< IC >					
IC400	8-759-111-44	IC	uPC4570C-1		
IC401	8-759-111-44	IC	uPC4570C-1		
IC402	8-759-000-49	IC	MC14066BCP		
IC404	8-752-060-64	IC	CXA1198AP		
IC501	8-759-140-11	IC	uPD4011BC		

Ref. No.	Part No.	Description	Remark		
IC502	8-759-040-01	IC	MC14001BCP		
IC503	8-759-140-11	IC	uPD4011BC		
IC515	8-759-604-86	IC	M5F7807		
IC516	8-759-604-90	IC	M5F7907		
< COIL >					
L400	1-410-780-11	INDUCTOR		27mH	
L500	1-410-780-11	INDUCTOR		27mH	
< TRANSISTOR >					
Q400	8-729-900-89	TRANSISTOR	DTC144ES		
Q402	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q403	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q500	8-729-900-89	TRANSISTOR	DTC144ES		
Q502	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q503	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q504	8-729-194-57	TRANSISTOR	2SC945-P		
Q505	8-729-194-57	TRANSISTOR	2SC945-P		
Q506	8-729-281-52	TRANSISTOR	2SC1815-Y		
Q507	8-729-900-61	TRANSISTOR	DTA114ES		
Q508	8-729-900-80	TRANSISTOR	DTC114ES		
Q509	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q511	8-729-900-65	TRANSISTOR	DTA144ES		
Q512	8-729-900-89	TRANSISTOR	DTC144ES		
< RESISTOR >					
R417	1-249-433-11	CARBON	22K	5%	1/4W
R418	1-249-441-11	CARBON	100K	5%	1/4W
R431	1-249-435-11	CARBON	33K	5%	1/4W
R432	1-247-868-11	CARBON	36K	5%	1/4W
R433	1-247-883-00	CARBON	150K	5%	1/4W
R436	1-249-437-11	CARBON	47K	5%	1/4W
R437	1-249-437-11	CARBON	47K	5%	1/4W
R438	1-247-874-11	CARBON	62K	5%	1/4W
R439	1-249-440-11	CARBON	82K	5%	1/4W
R441	1-247-882-11	CARBON	130K	5%	1/4W
R442	1-249-435-11	CARBON	33K	5%	1/4W
R443	1-247-868-11	CARBON	36K	5%	1/4W
R446	1-249-438-11	CARBON	56K	5%	1/4W
R450	1-247-868-11	CARBON	36K	5%	1/4W
R451	1-247-872-11	CARBON	51K	5%	1/4W
R452	1-249-437-11	CARBON	47K	5%	1/4W
R453	1-247-881-00	CARBON	120K	5%	1/4W
R517	1-249-433-11	CARBON	22K	5%	1/4W
R518	1-249-441-11	CARBON	100K	5%	1/4W
R527	1-249-441-11	CARBON	100K	5%	1/4W
R532	1-249-393-11	CARBON	10	5%	1/4W
R538	1-249-385-11	CARBON	2.2	5%	1/6W
R539	1-249-392-11	CARBON	8.2	5%	1/4W

TC MAIN

VOL

Ref. No.	Part No.	Description	Remark
R540	1-249-392-11	CARBON 8.2 5% 1/4W	

< VARIABLE RESISTOR >

RV400	1-230-496-11	RES, ADJ, CARBON 10K	
RV401	1-230-496-11	RES, ADJ, CARBON 10K	
RV402	1-230-496-11	RES, ADJ, CARBON 10K	
RV403	1-230-499-11	RES, ADJ, CARBON 100K	
RV500	1-230-496-11	RES, ADJ, CARBON 10K	

RV501	1-230-496-11	RES, ADJ, CARBON 10K	
RV502	1-230-496-11	RES, ADJ, CARBON 10K	
RV503	1-230-499-11	RES, ADJ, CARBON 100K	
RV504	1-230-495-11	RES, ADJ, CARBON 2.2K	
RV505	1-230-495-11	RES, ADJ, CARBON 2.2K	

< RELAY >

RY400	1-515-614-11	RELAY	
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< TRANSFORMER >

T500	1-433-349-11	TRANSFORMER, BIAS OSCILLATION	
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*	1-641-706-11	VOL BOARD	
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< CAPACITOR >

C1120	1-161-379-00	CERAMIC 0.01uF 20% 25V	
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< VARIABLE RESISTOR >

RV1109	1-241-350-11	RES, VAR, CARBON 100K/100K (VOLUME)	
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MISCELLANEOUS

11	1-590-459-11	WIRE, FLAT TYPE (11 CORE)	
12	1-590-578-11	WIRE, FLAT TYPE (19 CORE)	
△15	1-569-007-11	ADAPTER, CONVERSION 2P (E3, MY)	
△59	1-690-708-11	CORD (WITH CONNECTOR)	
△CNP13011	575-653-11	CORD, POWER (E, MY)	
△CNP13011	690-608-11	CORD, POWER (WITH CONNECTOR) (AUS)	
△F1301	1-532-237-00	FUSE, TIME LAG (3.15A)	
△F1302	1-532-237-00	FUSE, TIME LAG (3.15A)	
△F1303	1-532-203-00	FUSE (2.0A)	
△F1304	1-532-203-00	FUSE (2.0A)	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP1	1-543-319-11	HEAD, MAGNETIC (PB) (DECK A)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB) (DECK B)	
M1	X-3362-377-1	MOTOR (WH) ASSY	
△S1301	1-572-267-61	SWITCH, PUSH (AC POWER) (1 KEY)	

Ref. No.	Part No.	Description	Remark
△T1301	1-450-311-11	TRANSFORMER, POWER	
△VS1301	1-570-046-21	SWITCH, VOLTAGE CHANGE	

ACCESSORIES & PACKING MATERIALS

	1-465-962-11	COMMANDER (STANDARD TYPE) (RM-S171)	
*	3-376-136-01	CUSHION (HALF)	
*	3-703-713-41	STICKER, SONY SYMBOL (10)	
	4-921-934-01	SHEET, PROTECTION	
	4-941-762-01	COVER BATTERY (RM-S171)	
*	4-949-428-11	CUSHION	

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-133-19	SCREW +P 2.6X6 TYPE2	
#3	7-621-775-20	SCREW +B 2.6X5	
#4	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S	
#5	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#6	7-623-921-01	RING, RETAINING, CAPSTAN	
#7	7-682-547-04	SCREW +BVTT 3X6 (S)	
#8	7-688-001-01	W 2, SMALL	
#9	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#10	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-S	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

PS-LX49P

SERVICE MANUAL

AEP Model
UK Model
East European Model



SPECIFICATIONS

Turntable	
Platter	30cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 1/3 rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	60 dB (DIN-B)
Automatic system	Return, reject

Tonearm	
Type	Dynamically balanced
Pivot-to-stylus length	203 mm (8 in.)
Overall arm length	235 mm (9 1/4 in.)

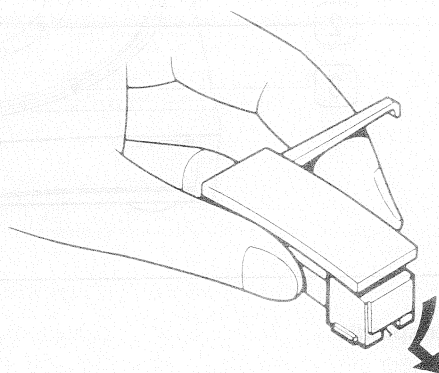
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz-20kHz
Stylus	CN-234

General	
Dimensions	355×96.5×348 mm(w/h/d) (14×3 4/5×13 3/4 inches)
Weight	Approx. 1.95kg (4 lb 5 oz)
Power requirements	12V DC
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus CN-234 Stat spray XP-C10 Cleaner XP-C1, XP-C2

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records. An CN-234 replacement stylus is available at your Sony dealer.

Be sure to turn the amplifier off before proceeding with replacement.

- 1 While holding the cartridge, detach the stylus assembly as illustrated.
- 2 Insert the new stylus into the cartridge.

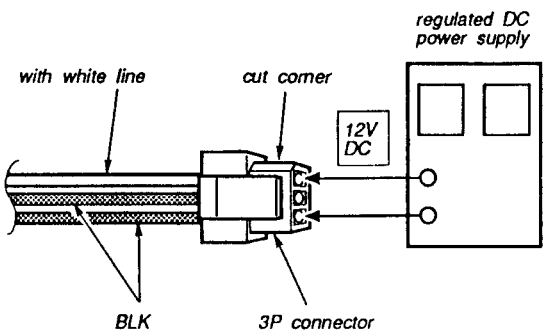


STEREO TURNTABLE SYSTEM
SONY®

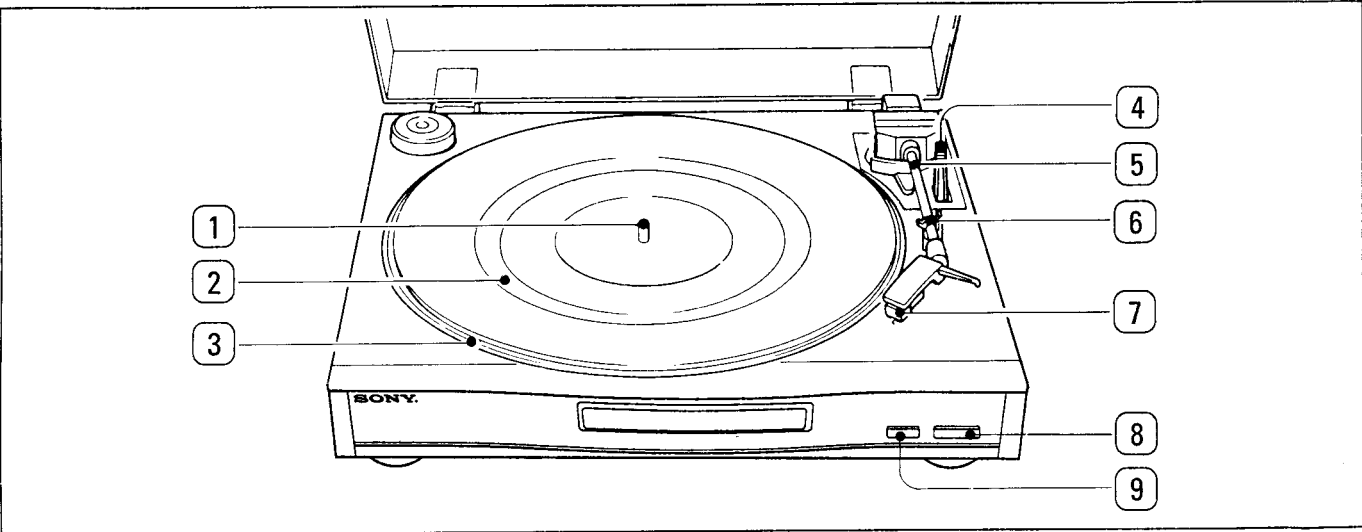
REPAIRING PRECAUTION

[To supply B+ voltage]

The power of this unit is fed from HST model. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.



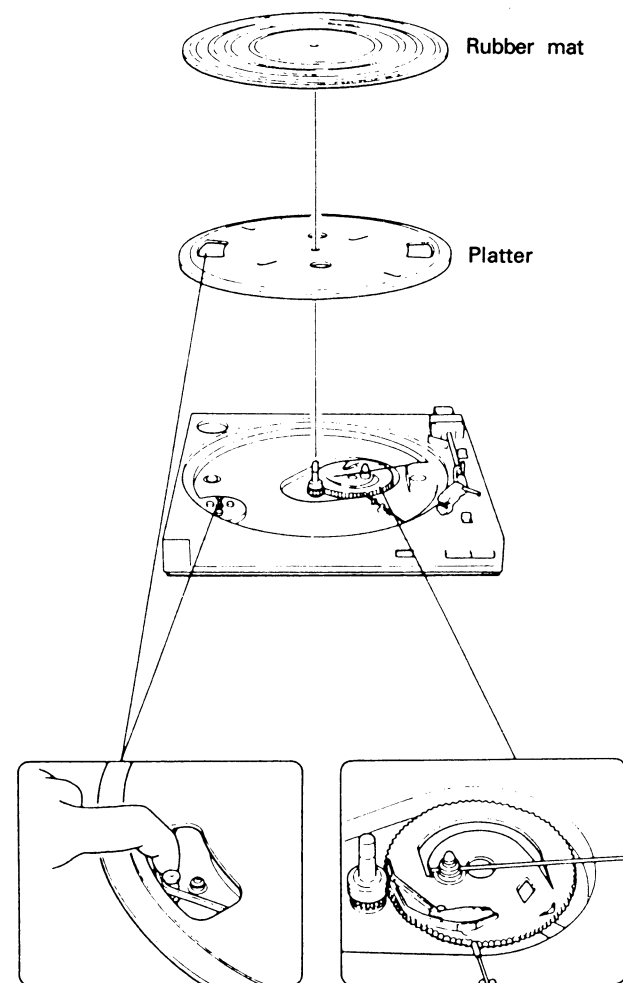
LOCATION AND FUNCTION OF CONTROLS



- 1 Center spindle
- 2 Rubber mat
- 3 Turntable platter
- 4 Cueing lever (∇ / ∇)
- 5 Tonearm
- 6 Arm rest
- 7 Cartridge
- 8 REJECT button
- 9 SPEED select button

Allows selection of 45rpm or 33rpm turntable speed.

TURNTABLE ASSEMBLY



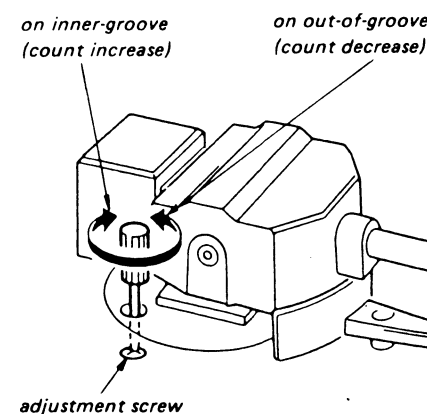
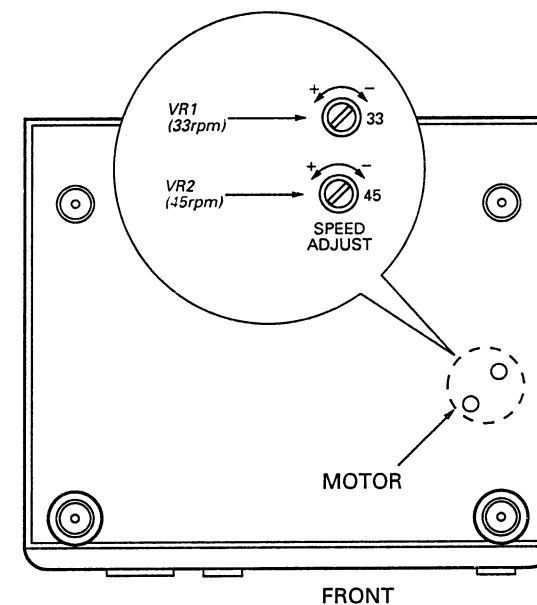
Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Stylus Drop-point Adjustment

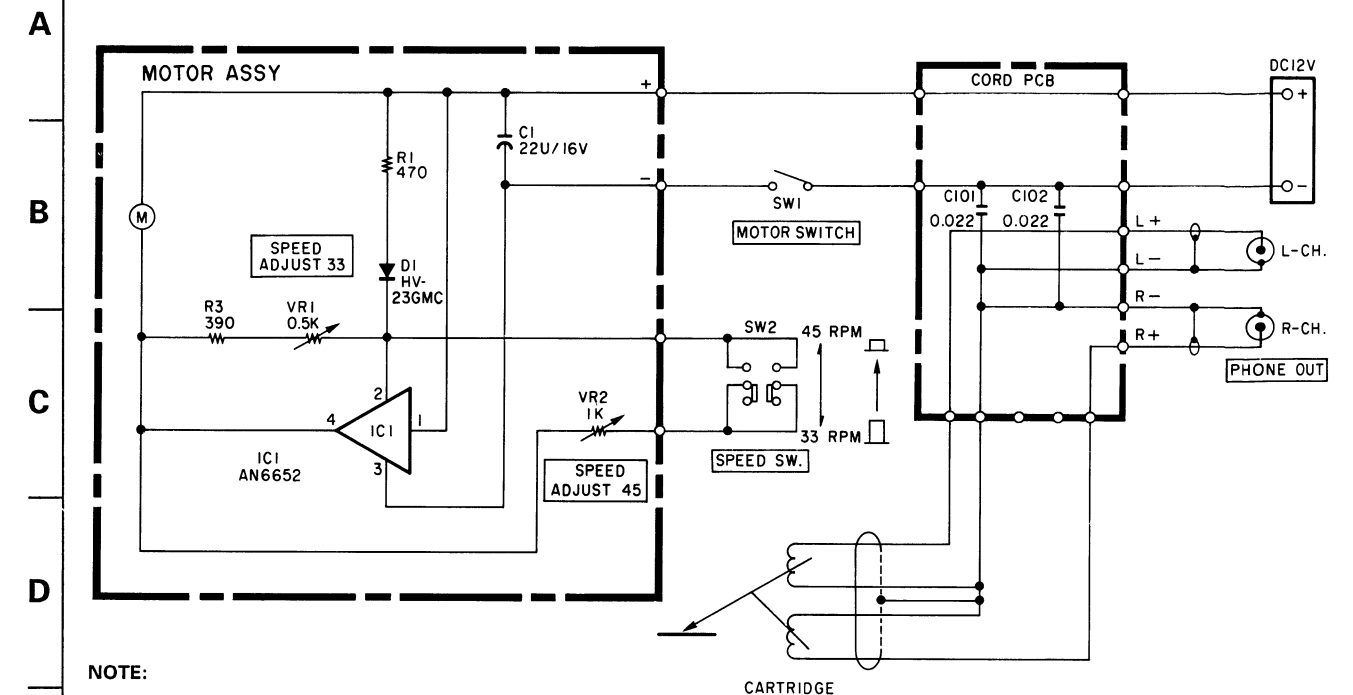
1. Place a test record (YFSC-16) on the turntable sheet.
 2. Set the SPEED switch to 33.
 3. Press the START button.
 4. By using a screwdriver, turn the adjustment screw so that the stylus tip drops on the record at the 7-17 counts position.
 5. Move the arm to return detecting groove and confirm that the auto-return operation is started normally.
- Note:** The proper adjustment for a 30cm record is also correct for a 17cm record.
when turning adjustment screw, put the arm on the arm rest.

Speed Adjustment

- Note:** Be sure to perform 45rpm adjustment before 33rpm.
1. Place a stroboscope board on the turntable sheet.
 2. Set the SPEED switch to 45.
Press the START button.
Adjust VR2 so that the striped pattern of stroboscope board is stationary.
 3. Set the SPEED switch to 33.
Adjust VR1 in the same way.



SCHEMATIC DIAGRAM



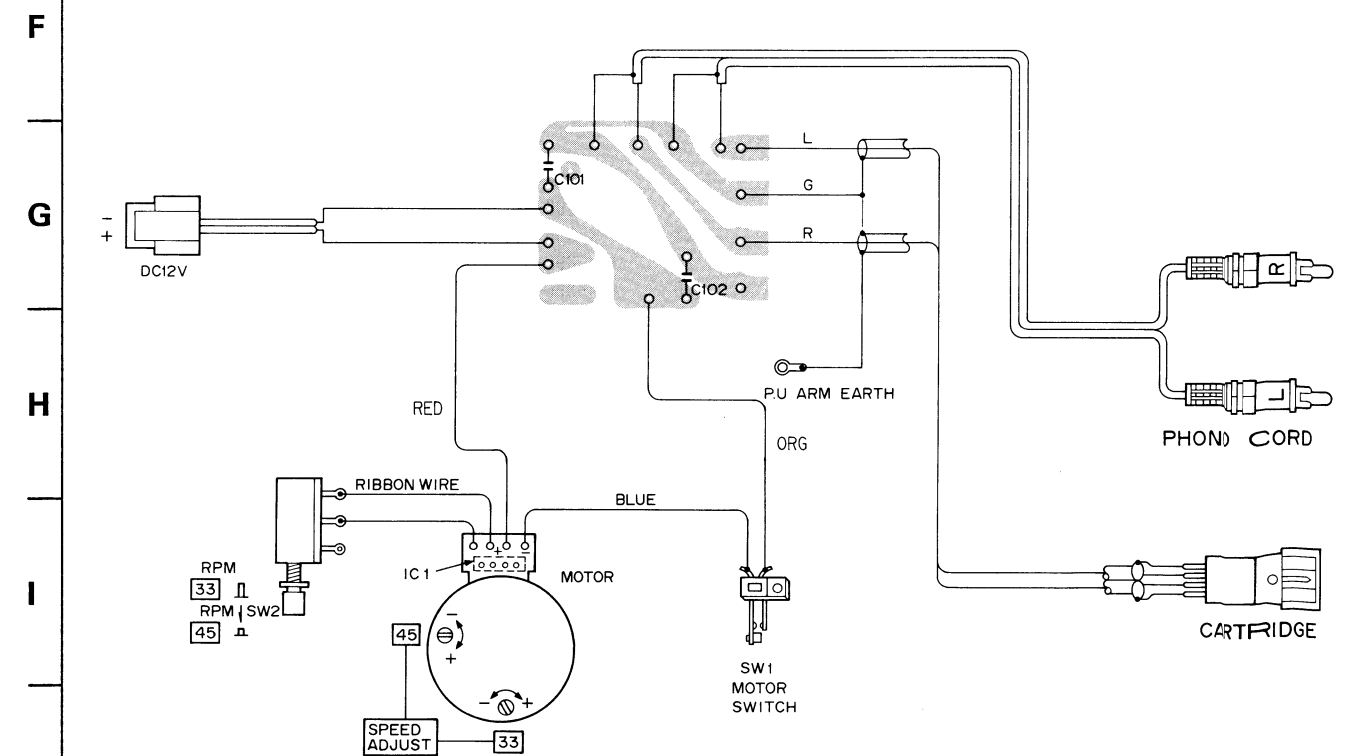
NOTE:

- All capacitors are in μF unless otherwise noted. pF ; μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Switches:

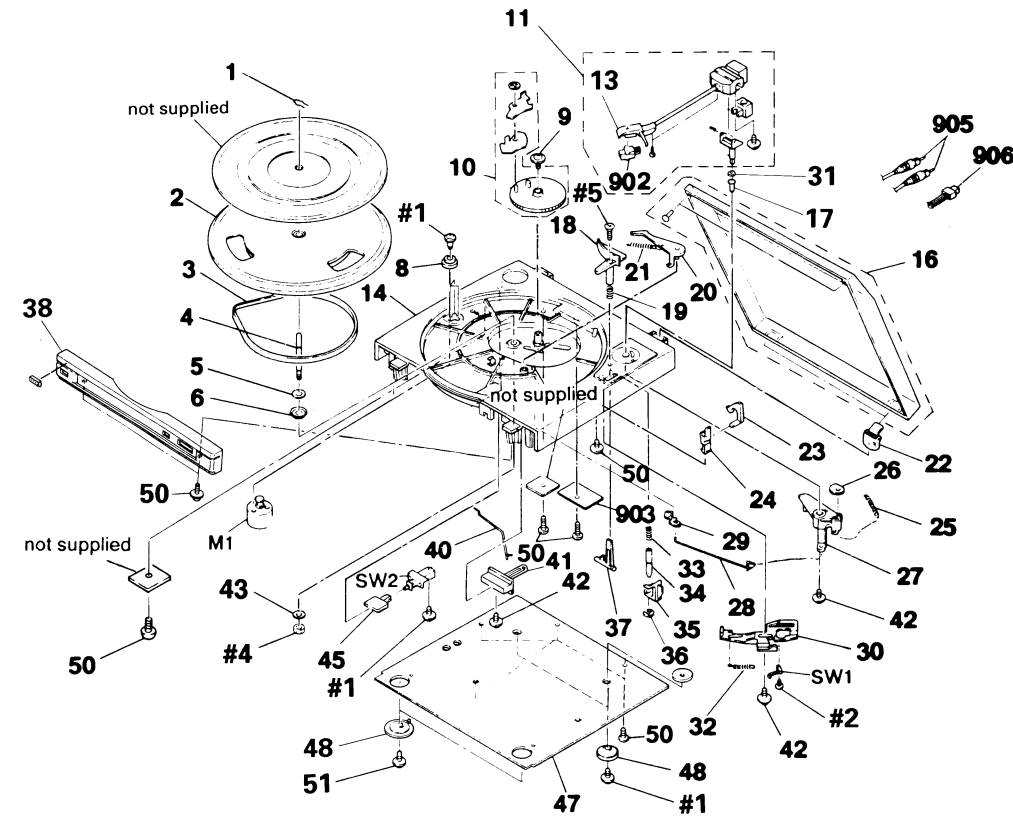
Ref.No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33

WIRING DIAGRAM



EXPLODED VIEW

- NOTE:
- XX, -X mean standardized parts, so they may have some differences from the original one.
 - The construction parts of an assembled part are indicated with a collation number in the remark column.
 - Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - The mechanical parts with no reference number in the exploded views are not supplied.
 - Screw(# mark) list is given in the last of this parts list.



Ref.No.	Part No.	Description	Remarks	Ref.No.	Part No.	Description	Remarks
1	4-895-490-01	CLIP, SPINDLE		26	4-895-818-01	CAM, ADJUSTMENT	
2	A-4604-243-A	TURNTABLE ASSY		27	* 4-896-372-01	LINK, RETURN	
3	4-943-396-01	BELT		28	4-896-371-01	ROD, TRIP	
4	* 4-896-361-01	SPINDLE		29	* 4-896-304-01	LEVER, TRIP	
5	4-895-024-01	POLY WASHER		30	* 4-896-373-01	ARM, SLIDE	
6	4-943-399-01	WASHER, FLAT		31	3-701-446-01	WASHER	
8	4-895-414-01	GROMMET (A)		32	4-896-374-01	SPRING (SLIDE ARM)	
9	4-896-294-01	SCREW(7-BID 3006 2N3A 10D)		33	4-943-405-01	SPRING, DUMPING	
10	4-895-495-01	GEAR, CAM, CLUTCH		34	4-896-252-01	SHAFT, ARM LIFT	
11	A-4660-132-A	ARM ASSY		35	4-896-253-01	FORK, LIFT	
13	1-543-927-11	HEAD P.U		36	4-896-254-01	RING (DIA.3), E	
14	* 4-943-945-01	CABINET, MAIN		37	4-896-212-01	LEVER, CUE	
16	A-4620-041-A	COVER ASSY, DUST		38	A-4660-133-A	PANEL, FRONT	
17	* 4-947-001-01	SHAFT, P.U		40	4-896-367-01	LOT (REJECT)	
18	4-896-258-01	PLATFORM, LIFT		41	4-950-458-01	BUTTON (REJECT)	
19	4-896-267-01	SPRING (A)		42	4-896-369-01	SCREW (7-CUP 3008 WF12 ZN3A)	
20	* 4-896-364-01	LEVER (REJECT)		43	4-943-397-01	WASHER, SPRING	
21	4-896-365-01	SPRING (C)		45	4-950-459-01	BUTTON (SPEED)	
22	4-896-321-01	HINGE ASSY		47	4-947-002-01	BOARD BOTTOM	
23	4-895-418-01	P.U. TUBE HOOK		48	4-895-435-01	FOOT	
24	4-943-398-01	REST, P.U		50	4-896-375-01	SCREW (7-CUP 3012 WF08 ZN3K)	
25	4-895-460-01	ADJUST SPRING		51	4-943-406-01	SCREW (7-CUP 3006 WF12 ZN3A)	

ELECTRICAL PARTS LIST

- NOTE:
- When indicating parts by reference number, please include the board name.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
 - XX, -X mean standardized parts, so they may have some difference from the original one.
 - RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
 - Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - SEMICONDUCTORS
In each case, u : μ , for example :
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...
 - CAPACITORS
MF : μ F, PF : μ μ F
 - COILS
MMH : mH, uH : μ H

Ref.No.	Part No.	Description	Remarks	Ref.No.	Part No.	Description	Remarks
902	1-549-142-11	CARTRIDGE		PACKING MATERIAL			
903	1-643-201-11	PC BOARD, CORD					
905	1-555-116-11	CORD, CONNECTION					
906	1-557-109-21	CORD, CONNECTION (3 CORE)					
M1	A-4604-244-A	MOTOR ASSY					
SW1	1-570-666-11	SWITCH, LEAF					
SW2	1-571-089-11	SWITCH, PUSH (1KEY) (SPEED)					
*****				*****			
				SCREW			
				#1	7-685-646-79	SCREW (7-CUP 3010 WF12 ZN3A)	
				#2	7-685-104-19	SCREW (7-PAN 2006 ZN3A)	
				#4	7-684-024-04	NUT 50 ZN3A	
				#5	7-621-561-49	SCREW (1-FLAT 2612 ZN3K)	

PS-LX49P

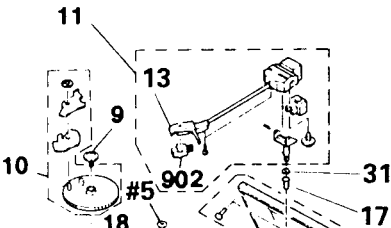
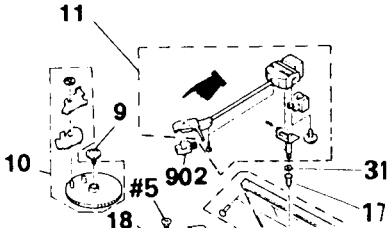

SONY
SERVICE MANUAL
REVISED

AEP Model
UK Model
East European Model

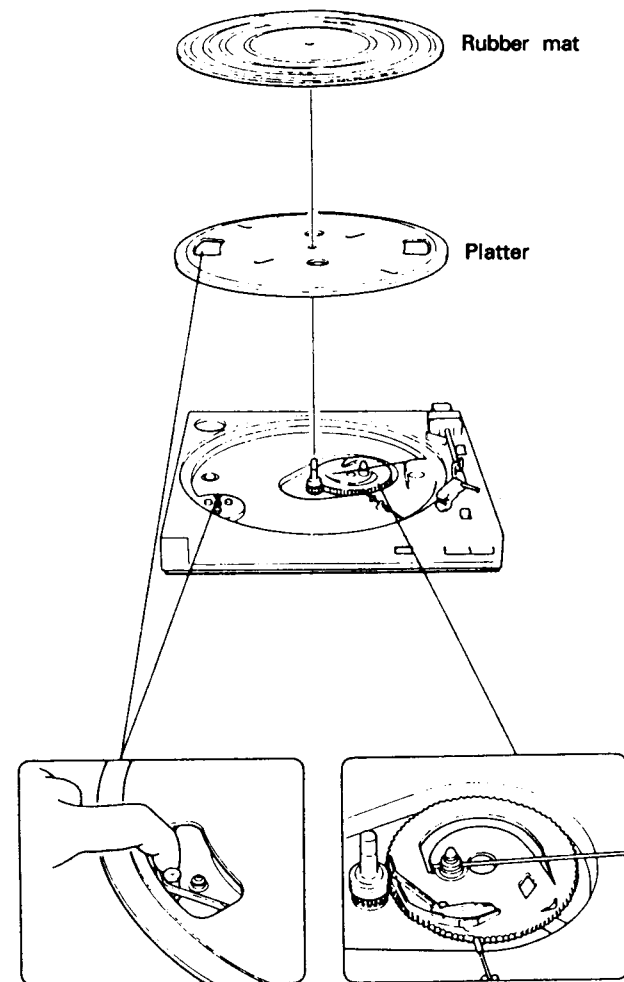
CORRECTION-1R

Correct your service manual as shown below.

 : Indicates corrected portion

Page	Incorrect	Correct												
5	 <table><tr><th>Ref No.</th><th>Part No.</th><th>Description</th></tr><tr><td>13</td><td>1-543-927-11</td><td>HEAD P.U</td></tr></table>	Ref No.	Part No.	Description	13	1-543-927-11	HEAD P.U	 <table><tr><th>Ref No.</th><th>Part No.</th><th>Description</th></tr><tr><td>—</td><td>—</td><td>—</td></tr></table>	Ref No.	Part No.	Description	—	—	—
Ref No.	Part No.	Description												
13	1-543-927-11	HEAD P.U												
Ref No.	Part No.	Description												
—	—	—												
6	<table><tr><td>902</td><td>1-549-142-11</td><td>CARTRIDGE</td></tr></table>	902	1-549-142-11	CARTRIDGE	<table><tr><td>902</td><td><u>1-251-028-11</u></td><td>CARTRIDGE</td></tr></table> 	902	<u>1-251-028-11</u>	CARTRIDGE						
902	1-549-142-11	CARTRIDGE												
902	<u>1-251-028-11</u>	CARTRIDGE												

TURNTABLE ASSEMBLY

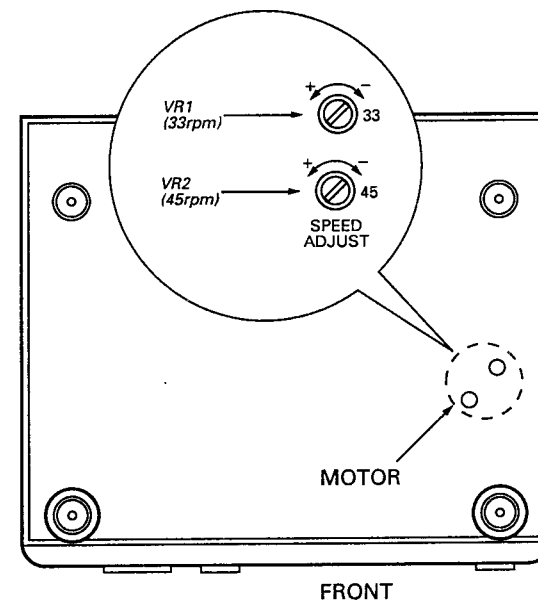


Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Speed Adjustment

Note: Be sure to perform 45rpm adjustment before 33rpm.

1. Place a stroboscope board on the turntable sheet.
Press the START button.
Adjust VR2 so that the striped pattern of stroboscope board is stationary.
3. Set the SPEED switch to 33.
Adjust VR1 in the same way.

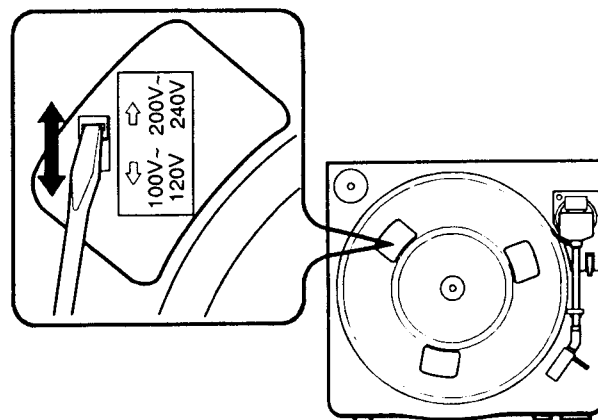


Setting the Voltage Selector

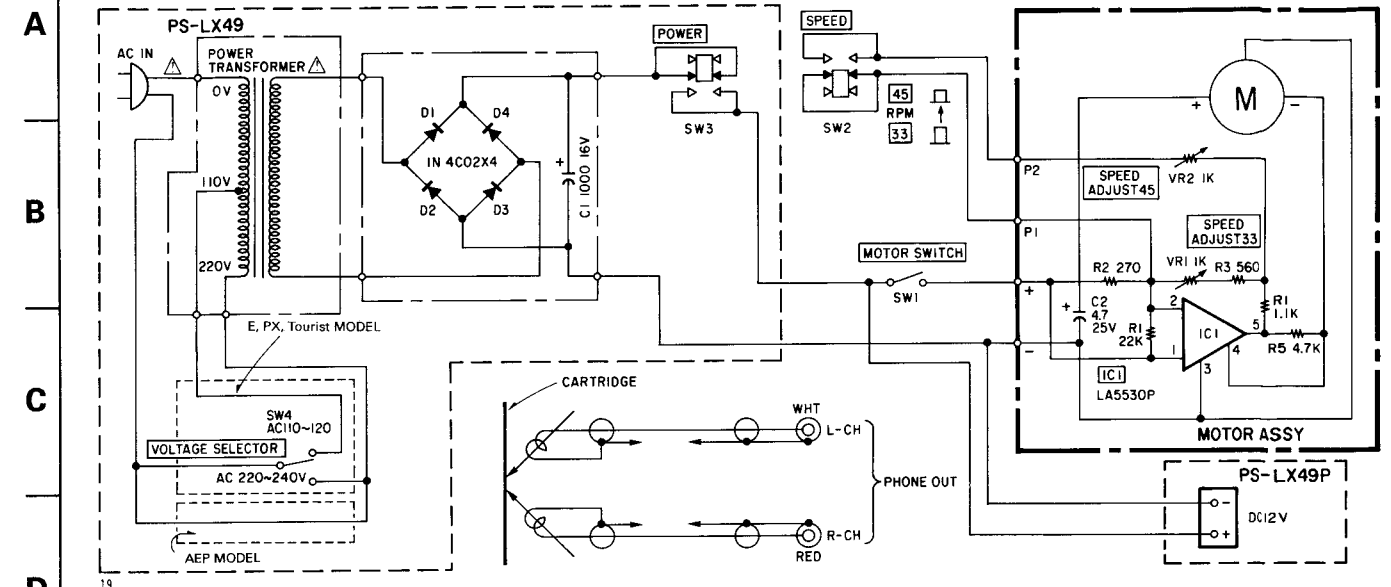
PS-LX49 (E, Saudi Arabia, PX, Tourist model)

For customers of the model equipped with the voltage selector

Check to confirm that the voltage selector is set to the local power line voltage. If not, set the voltage selector to the correct position before connecting the AC power cord to a wall outlet.



SCHEMATIC DIAGRAM



NOTE:

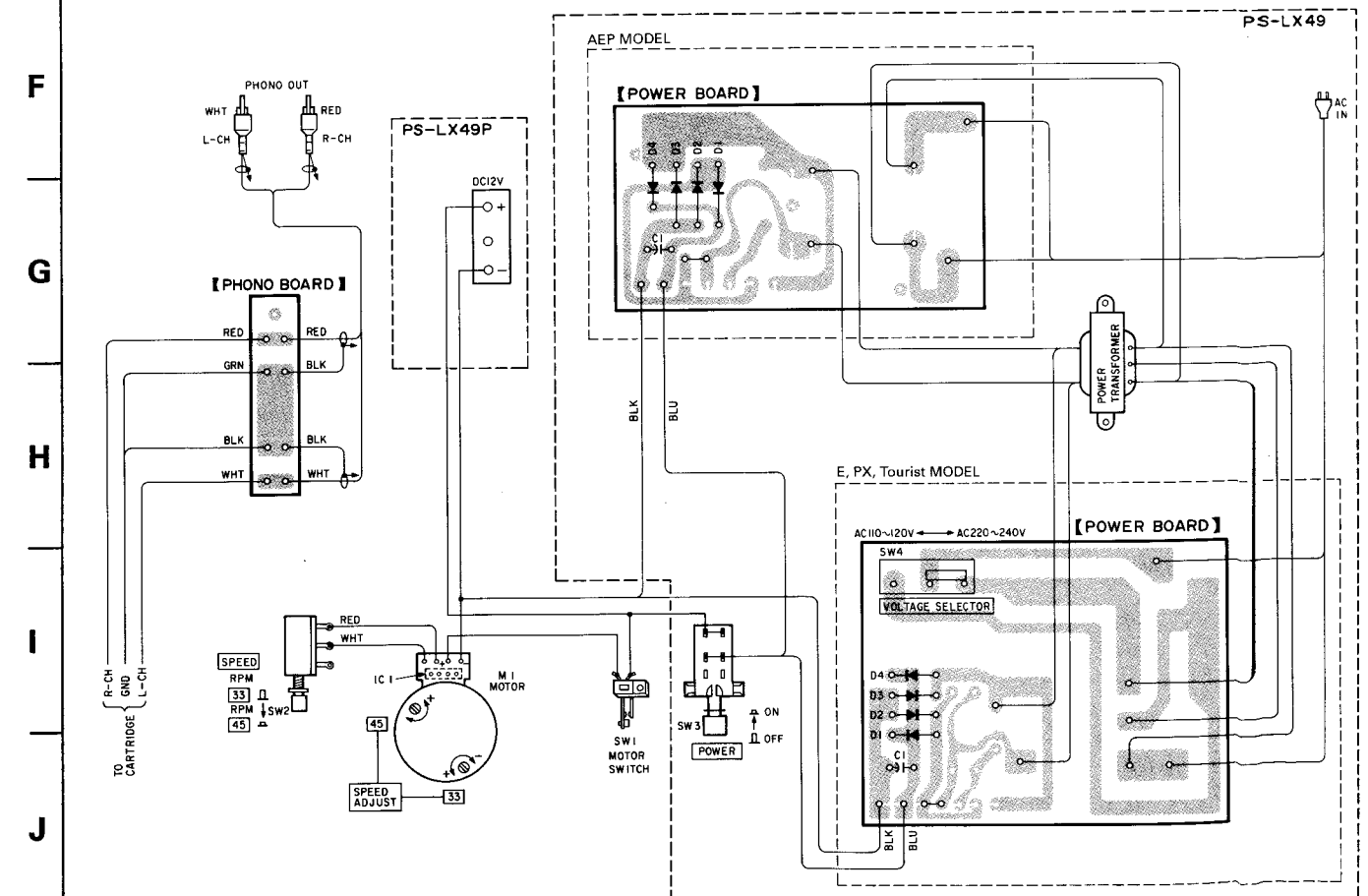
- All capacitors are in μF unless otherwise noted. pF : μF 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.

Switches:

Ref.No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

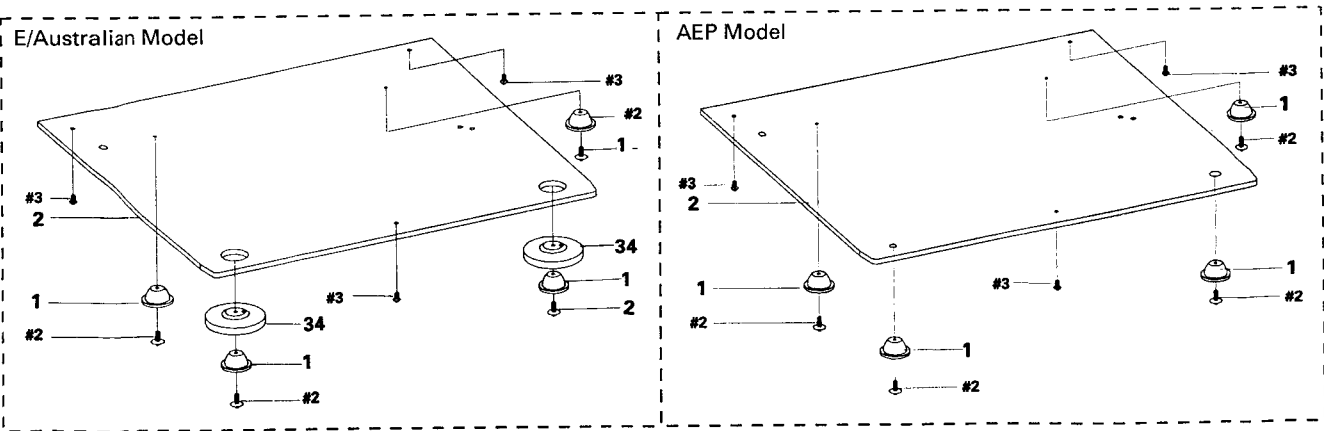
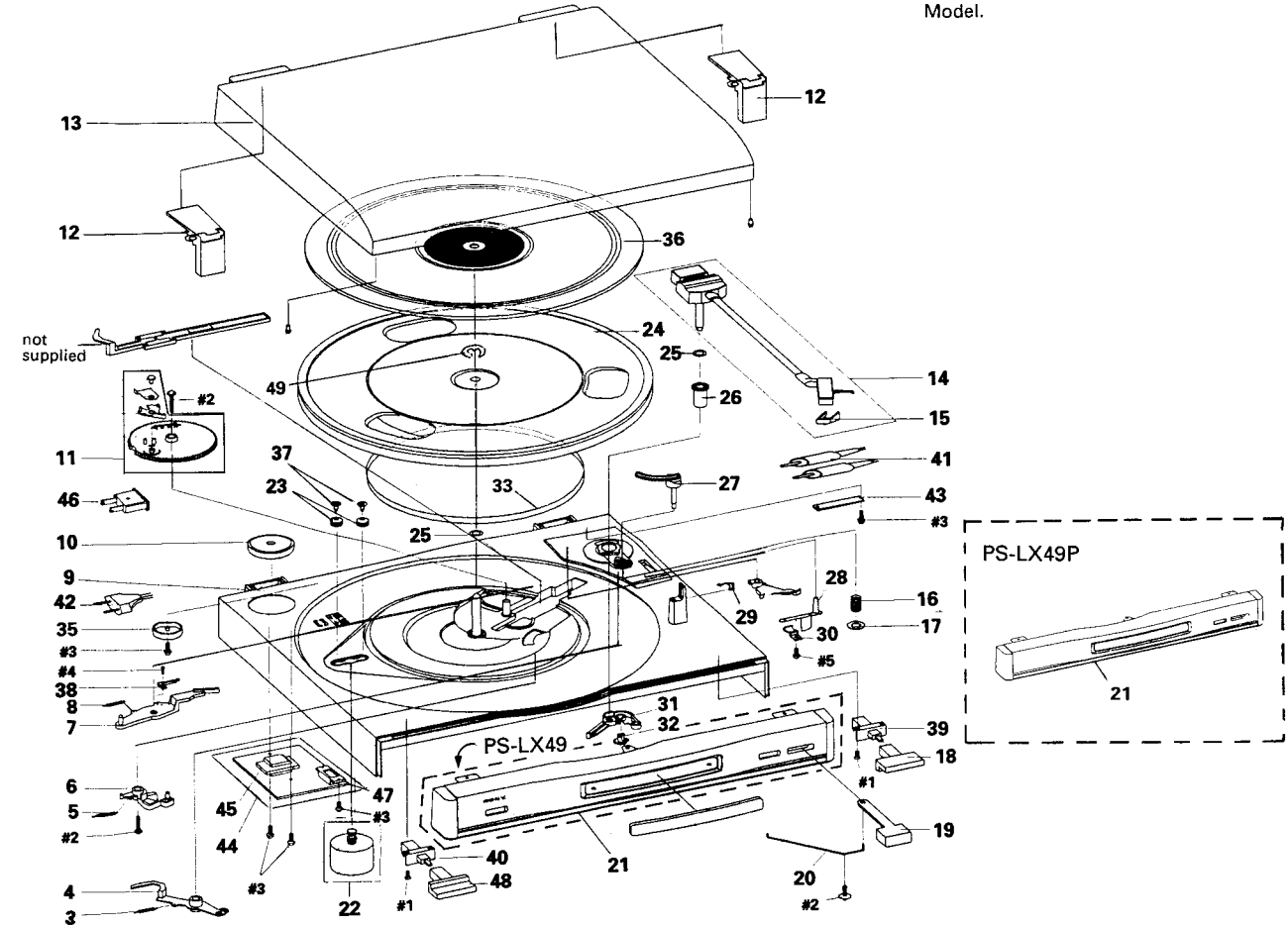
WIRING DIAGRAM



EXPLODED VIEW

NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Screw(# mark) list is given in the last of this parts list.
- The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.
- PX and Tourist Models are indential to E Model.



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	4-950-472-01	FOOT		5	4-950-455-01	SPRING-ELEVATOR	
* 2	4-950-471-01	COVER-BOTTOM (AUS, E)		6	4-950-454-01	ELEVATOR	
* 2	4-953-061-01	COVER-BOTTOM (AEP)		7	4-950-463-01	ARM-CONTROL	
3	4-950-453-01	SPRING-REJECT		8	4-950-464-01	SPRING-CONTROL ARM	
4	4-950-452-01	LEVER-REJECT		* 9	4-950-431-01	CABINET-UPPER	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
10	4-950-467-01	ADAPTOR-45RPM		30	4-950-441-01	BRACKET-CUEING	
11	A-4660-140-A	GEAR ASSY, RING		31	4-950-450-01	ARM-FEED	
12	4-950-432-01	HINGE		32	4-950-451-01	CAM-ADJUST	
13	A-4660-138-A	COVER ASSY, DUST		33	4-950-434-01	BELT	
14	A-4660-139-A	ARM ASSY, TONE		34	4-950-474-01	COVER-FOOT (AUS, E)	
15	4-951-290-01	STYLUS (CN-234)		* 35	4-950-514-01	WASHER CODE (AEP, E)	
16	4-950-442-01	SPRING-ELEVATION		36	A-4660-142-A	RUBBER ASSY, SHEET	
17	4-950-444-01	WASHER-C/S		37	4-950-469-01	SCREW-SETTING MOTOR	
18	4-950-445-01	BUTTON-SPEED		38	1-572-746-11	SWITCH, LEAF	
19	4-950-447-01	BUTTON-REJECT		39	1-572-744-11	SWITCH, PUSH (2 KEY) (SPEED)	
20	4-950-448-01	LINK-REJECT		Δ 40	1-572-744-11	SWITCH, PUSH (POWER) (LX49)	
21	A-4660-137-A	PANEL (G) ASSY, FRONT (LX49P) (AUS)		41	1-590-871-11	CORD, CONNECTION (3 CORE)	
21	A-4660-143-A	PANEL (G) ASSY, FRONT (LX49) (AEP, E)		42	1-558-943-11	CORD, POWER (LX49) (E)	
22	A-4660-141-A	MOTOR ASSY		42	1-558-944-11	CORD, POWER (LX49) (AEP)	
23	4-950-470-01	CUSHION-MOTOR		43	1-639-237-11	PHONE BOARD	
24	4-950-433-01	PLATTER		Δ 44	1-639-239-11	POWER BOARD (LX49) (E)	
25	4-950-435-01	SPACER		Δ 44	1-639-236-11	POWER BOARD (LX49) (AEP)	
26	4-950-436-01	BUSHING-TONE ARM		Δ 45	1-450-508-11	TRANSFORMER, POWER (LX49)	
27	4-950-437-01	ARM-ELEVATION		Δ 46	1-693-159-11	ADAPTER, AC (LX49) (E)	
28	4-950-440-01	LEVER-CUEING		Δ 47	1-572-745-11	VOLTAGE SELECTOR (LX49) (E)	
29	4-950-439-01	LOCKER-ARM		48	4-950-513-01	BUTTON POWER (AEP, E)	
				49	4-953-059-01	E RING	

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

- XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA... : μ A..., uPA... : μ PA...,
uPB... : μ PB..., uPC... : μ PC...,
uPD... : μ PD...
- CAPACITORS
MF : μ F, PF : μ F
- COILS
MMH : mH, uH : μ H
- PX and Tourist Models are indential to E Model.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS *****				ACCESSORIES & PACKING MATERIALS *****			
38	1-572-746-11	SWITCH, LEAF		* 4-950-496-01	SNOW BOX (L)		
39	1-572-744-11	SWITCH, PUSH (2 KEY) (SPEED)		* 4-950-503-01	SNOW BOX (R)		
Δ 40	1-572-744-11	SWITCH, PUSH (POWER) (LX49)		* 4-950-504-01	CARTON (AUS)		
41	1-590-871-11	CORD, CONNECTION (3 CORE)		* 4-950-515-01	CARTON (E)		
Δ 42	1-558-943-11	CORD, POWER (LX49) (E)		3-754-841-11	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese) (AEP, E)		
Δ 42	1-558-944-11	CORD, POWER (LX49) (AEP)		3-754-841-41	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian) (AEP)		
Δ 44	1-639-236-11	POWER BOARD (LX49) (AEP)		*****			
Δ 44	1-639-239-11	POWER BOARD (LX49) (E)		HARDWARE LIST			
Δ 45	1-450-508-11	TRANSFORMER, POWER (LX49)		#1	7-685-246-19	SCREW +KTP 3X8 TYPE2 NON-SLIT	
Δ 47	1-572-745-11	VOLTAGE SELECTOR (LX49) (E)		#2	7-685-903-21	SCREW +PTPWH 3X8 TYPE2	
*****				#3	7-685-546-19	SCREW	
				#4	7-685-104-11	SCREW +P 2X6 TYPE2 NON-SLIT	

PS-LX49/LX49P

SERVICE MANUAL



Photo : PS-LX49

AEP Model
E Model
PX Model
Tourist Model
PS-LX49
Australian Model
PS-LX49P

SPECIFICATIONS

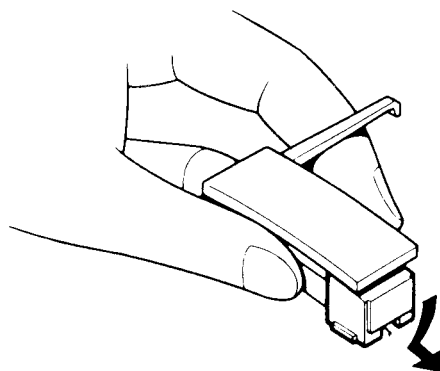
Turntable	
Platter	30cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 1/3 rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	60 dB (DIN-B)
Automatic system	Return, reject
Tonearm	
Type	Dynamically balanced
Pivot-to-stylus length	203 mm (8 in.)
Overall arm length	235 mm (9 1/4 in.)
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz-20kHz
Stylus	CN-234
General	
Dimensions	355 × 94 × 345 mm(w/h/d) (14 × 3 7/8 × 13 3/8 inches)
Weight	Approx. 2.5 kg (5 lb 8 oz)
Power requirement	AEP, Italian, Germany model: 220-230 V AC, 50/60 Hz PX, Tourist, E, Saudi Arabia model: 110-120 V/220-240V AC, Adjustable with the voltage selector, 50/60 Hz Australia model 12V DC
Power consumption	2 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus CN-234 Stat spray XP-C10 Cleaner XP-C1, XP-C2

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records. An CN-234 replacement stylus is available at your Sony dealer.

Be sure to turn the amplifier off before proceeding with replacement.

- 1 While holding the cartridge, detach the stylus assembly as illustrated.
- 2 Insert the new stylus into the cartridge.

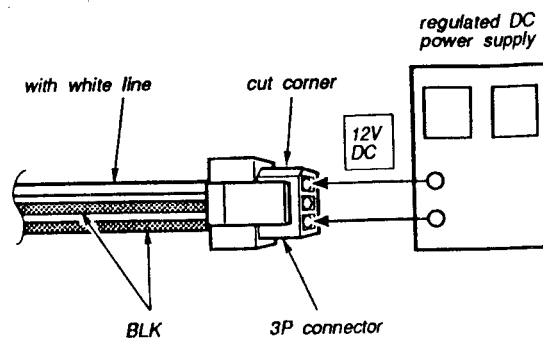
STEREO TURNTABLE SYSTEM
SONY®



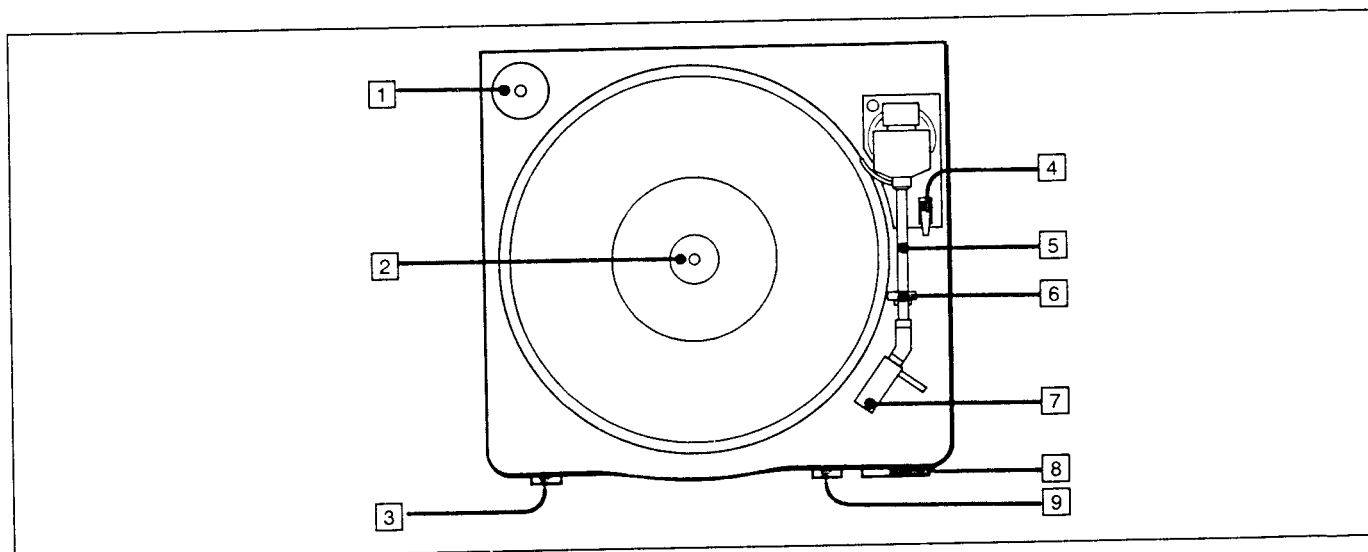
REPAIRING PRECAUTION (PS-LX49P only)

[To supply B+ voltage]

The power of this unit is fed from HST model. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.



LOCATION OF CONTROLS



- 1 45-rpm adaptor
- 2 Center spindle
- 3 POWER switch (PS-LX49 only)
- 4 Cueing lever
- 5 Tonearm
- 6 Arm rest
- 7 Cartridge
- 8 REJECT button
- 9 Speed selector

SS-D11/D22

SERVICE MANUAL

*E Model
Australian Model*

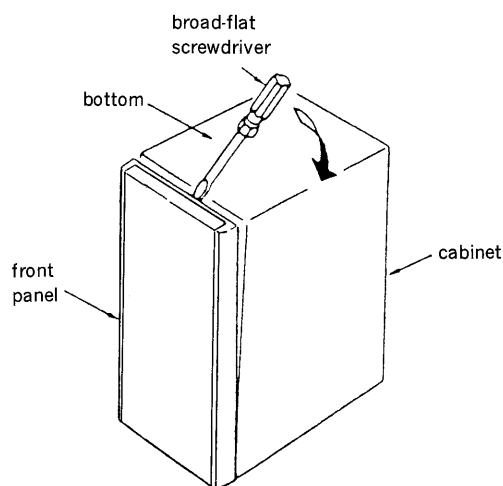
SPECIFICATIONS	
Speaker system	3-way
Speaker units	Woofer: 17cm cone type
	Mid-range: 6.5cm cone type
	Tweeter: 2cm ceramic tyze (D11)
	Tweeter: 6.5cm cone type (D22)
Enclosure type	Bass reflex
Sensitivity	89dB/W/m
Frequency range	50—20,000Hz
Rated impedance	6 ohms
Dimensions	Approx. 260x441x185mm (w/h/d) (D11)
	Approx. 280x470x185mm (w/h/d) (D22)
Weight	Approx. 4.3kg per speaker (D11)
	Approx. 5.2kg per speaker (D22)
Design and specifications subject to change without notice.	



photo: SS-D11

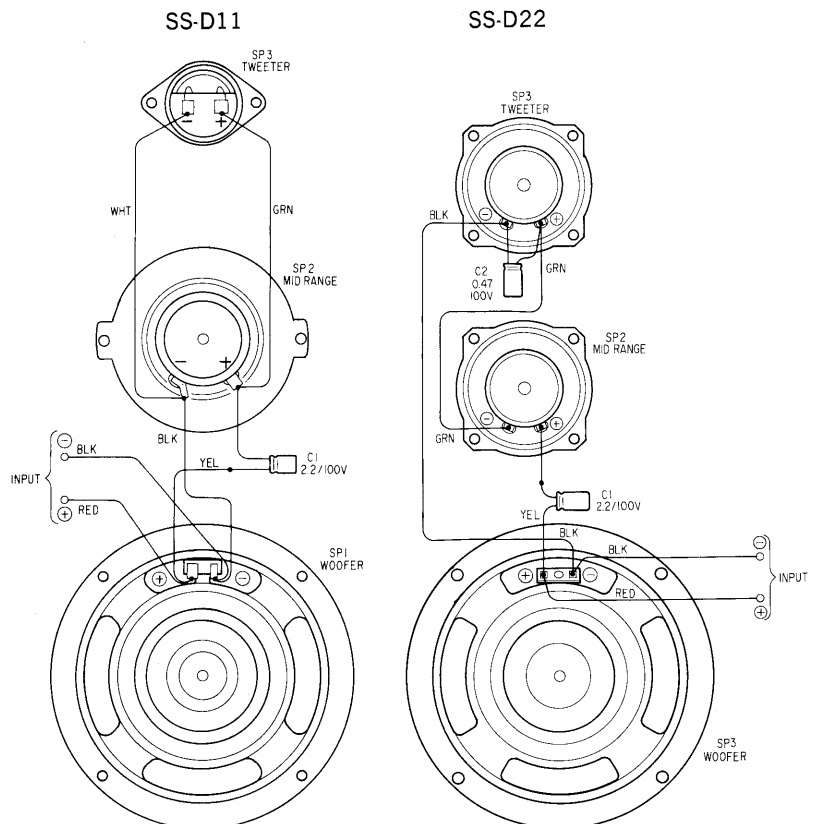
This set is the speaker system in LBT-A10, LBT-A20, LBT-A10K and LBT-A20K.

1. FRONT PANEL REMOVAL



Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM

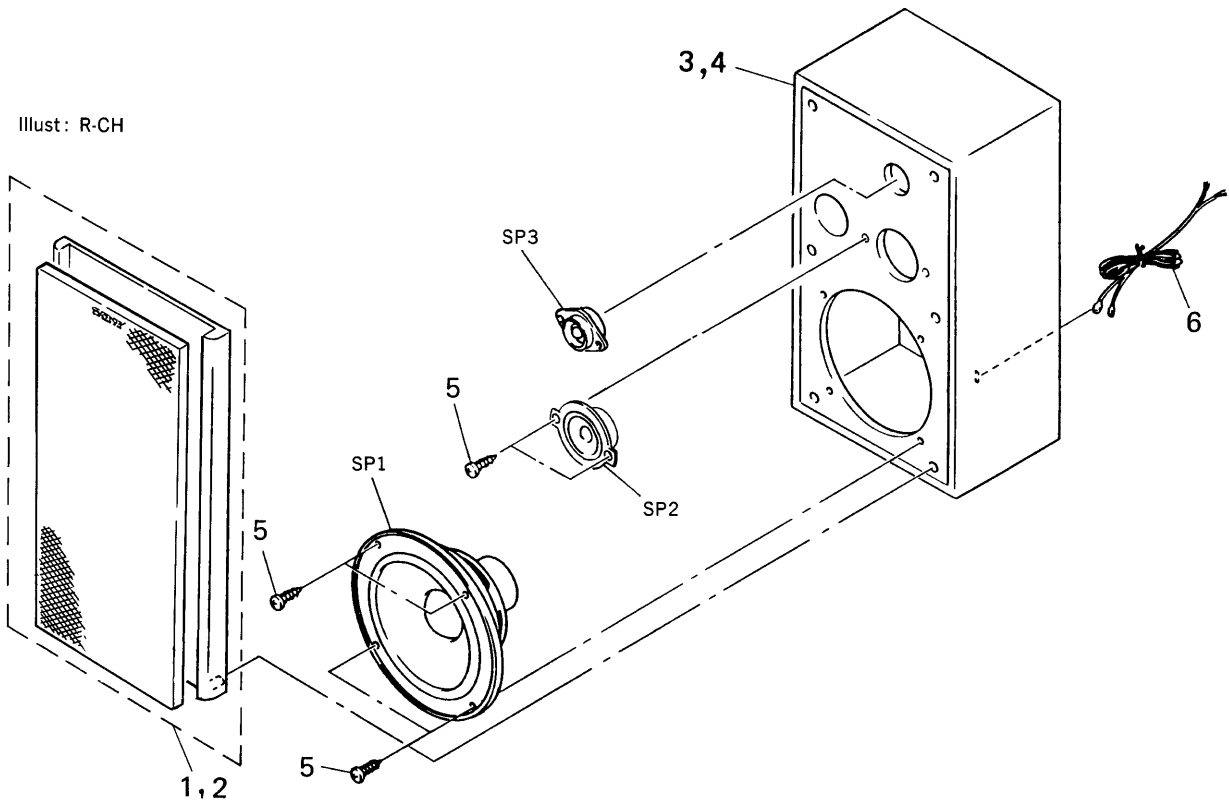


SPEAKER SYSTEM
SONY®

3. EXPLODED VIEW AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)
Parts Color Cabinet's Color



Ref.No	Part No.	Description	Remark
1	X-4942-232-1	PANEL (L) ASSY, FRONT (D11)	
1	X-4942-226-1	PANEL (L) ASSY, FRONT (D22)	
2	X-4942-233-1	PANEL (R) ASSY, FRONT (D11)	
2	X-4942-227-1	PANEL (R) ASSY, FRONT (D22)	
3	X-4941-381-1	CABINET (L) ASSY, SPEAKER (D11)	
3	X-4942-229-1	CABINET (L) ASSY, SPEAKER (D22)	
3	*X-4942-901-1	CABINET (L) ASSY, SPEAKER (D11) (THAILAND)	
3	*X-4942-907-1	CABINET (L) ASSY, SPEAKER (D22) (THAILAND)	
4	X-4941-382-1	CABINET (R) ASSY, SPEAKER (D11)	
4	X-4942-230-1	CABINET (R) ASSY, SPEAKER (D22)	
4	*X-4942-904-1	CABINET (R) ASSY, SPEAKER (D11) (THAILAND)	
4	*X-4942-908-1	CABINET (R) ASSY, SPEAKER (D22) (THAILAND)	
5	4-874-614-61	SCREW (M3.5X16)	
6	1-575-696-11	CORD, SPEAKER (WITH (C)) (D11)	
6	1-575-697-11	CORD, SPEAKER (WITH (C)) (D22)	

Ref.No	Part No.	Description	Remark
SP1	1-544-451-11	SPEAKER (16CM) (D11)	
SP1	1-544-746-11	SPEAKER (16CM) (D22)	
SP1	1-544-269-11	SPEAKER (16CM) (D22) (THAILAND)	
SP2	1-544-452-21	SPEAKER (6CM) (D11)	
SP2	1-544-726-11	SPEAKER (6CM) (D22)	
SP2	1-544-205-11	SPEAKER (6CM) (D22) (THAILAND)	
SP3	1-544-453-21	SPEAKER (2CM) (D11)	
SP3	1-544-726-11	SPEAKER (6CM) (D22)	
SP3	1-544-205-11	SPEAKER (6CM) (D22) (THAILAND)	

ACCESSORY & PACKING MATERIAL

- *4-950-757-01 CUSHION
- *4-944-829-01 CUSHION (THAILAND)